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BRITISH 9D. EDITION

BLIND MAN'S BUFF

BY MALCOLM JAMESON

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All stories in this magazine are fiction. No actual persons are designated either by name or character. Any similarity is coincidental.

BLIND MAN'S BUFF

By MALCOLM JAMESON

The Commission had a fine-sounding offer—just show 'em how much of Venus you wanted and it was yours. Trouble was, you had to make a map of the unmappable!

THE bright dot had grown to a disk days before, now it was a dazzling silvery sphere, looming straight ahead. Lorimer, the assistant umpire, sat in the radio booth dozing, his headphone strapped on. Hartley made a few last adjustments to his adored Maggy—the instrument with the X-ray eye—and then walked over to where Travis sat staring into the visi-screen.

"The big money sure ganged up on us," remarked Hartley, surveying the outside scene as reflected before them.

"They've got numbers, if that is what you mean," said Travis, with a grim chuckle, "but I'm not so sure about the brains. The Farrington-Driscoll combine always did their dirty work statistically. They're doing it now. Most of those poor devils you see out there won't be alive this time tomorrow. Driscoll's game is as simple as the Rule of Three. The mortality of ships trying to land on Venus is roughly a hundred to one. Ergo! He sends a hundred and some odd ships. His competitors—like you and me and old Buck Turner—are playing singletons. All of us combined, if we were combined—which we are not—haven't a ghost of a show along with his bird dogs."

"Unless we're smarter," amended Hartley.

"Yes," grunted Travis.

Other ships were to the right and left of them, abreast but curving downward in a great circle that closed forty miles below their keel. The formation centered on the lone cruiser that carried the chief umpire and which followed the base course between

the Earth and the planet of their destination. Shortly they would arrive at the point ten diameters distant from Venus, and that was where the take-off would be. After that it would be a free-for-all scramble for the honor—and untold riches—of being the first man down.

Most of the ships carried the yellow-and-blue markings of the newly formed Venusian Land Development Co., the Farrington-Driscoll enterprise. Buck Turner's rusty old tub floated somewhere on the far side of the circle. Nearby were two crazily converted yachts manned by adventure-struck college kids. A quadrant away there were several other independent entries, all of an impractical nature. One was a man who fondly held the theory that the only way to tear away the deadly veil of Venus was to take actual soundings with wire drags and then drop kite baloons with moorings. His idea was to plant buoys, so to speak, to mark the more dangerous crags. Another was a fellow who claimed to be an expert meteorologist, and whose ship was fitted with bins containing colored flours. By dumping those on the Venusian cirrus he hoped to make stains whose motions he could study. By charting the general circulation of the upper air and noting the presence of updrafts and eddies, he hoped to deduce the locations of the hazards below.

Travis and Hartley's own hope was pinned on magnar—the Maggy, as they preferred to call it—a squat machine that embodied all the virtues of super-radar plus, but inverted. Where old-style radio used oscillating electric currents to generate magnetic waves, magnar operated on reverse principles. Surges of magnetrons set up electric strains which reacted from the surroundings. The results were incomparably more satisfactory than with standard electronic equipment since it was penetrative and analytic as well. But marvelous as the instrument was in its tests under terrestrial conditions, its behavior on Venus was yet to be ascertained. Curious magnetic phenomena had been observed there, due probably to the proximity to the fierce radiation of the sun. Auroras were encountered at all latitudes, and there was known to be a low belt practically opaque to all but long waves. But for better or for worse, they intended to depend on their device to get them safely down, and for the later complying with the strict rules laid down by the Bureau of Genomics in the staking out of their claim.

A gong struck warningly, and Lorimer came to life.

"It's the standby signal," he said, and cut in the loudspeaker.

"All ships, attention," boomed the voice of the chief umpire. "In five minutes we will arrive at the take-off point. See that you are not ahead of the station or you will be disqualified. Everyone listen carefully while I refresh you on the rules. Ships will go in with open mikes, so that I can keep track of your whereabouts. Upon making your planetfall you are to ground your ship where it may be, leaving the assistant umpire on board for communication purposes. Set up a radio beacon at once so that if necessary I can visit you to check up. After that you are free to explore the territory about you."

There was a pause for acknowledgments up to that point. Travis nodded. He knew the rules. The signals came through loud and clear. Violent earthquakes and torrents of boiling volcanic mud falling as rain drove him away shortly after he landed, but the beacon he left behind served long enough to allow him to regain the stratosphere safely. It ceased sending within the hour, indicating that subsequent earthquakes had destroyed it, but it showed what was possible.

"After your reconnaissance," went on the voice from the cruiser, "you should then stake out your claims. Vague descriptions, wooden stakes, blazes on trees, or loosely piled stone cairns will not do. There was too much litigation arising from the careless early surveying of Mars. Good topographic maps must be submitted, tracts described by metes and bounds, and the corners tied to salient landmarks. If possible, the survey should be tied to the planetary grid. In cases of conflict, title will be awarded to the most accurately mapped claim."

"Imagine that!" sniffed Hartley. "Expecting good topography in a dense fog. It's a good thing we have the Maggy."

Travis was silent. He was wondering how those clauses happened to be in the conditions. Could it be that Driscoll had a hand in it, knowing their meaninglessness but having devised some way to beat the game? For the term planetary gril implied either a previous triangulation survey or the establishment of circles of latitude and longitude, a manifest impossibility in view of the record. Perhaps Driscoll meant to perform such a survey. He had an army of

men, and was known to have taken aboard a great quantity of infrared equipment. Given time and men enough, Venus could be triangulated, using heat detectors and directional walkie-talkies. It was a disturbing thought.

"Ten seconds to go," warned the cruiser, after which came the long buzz.

"Hop to it, and good luck," were the umpire's final words.

The screen was no longer jet-black with the bright silver ball in its center. It was half-and-half silver and black, the velvety star-spangled sky covering the upper part, and the dazzling shell of Venus the lower. The dividing line had been a strongly curving arc—a segment of the upper limb of the planet. But it had flattened little by little until it showed no curvature. It was a straight line—a horizon. What lay below appeared to be an endless, featureless field of snowy white, flat as a floor. It looked like snow, but it was not. It was an expanse of spicules of ice, the frozen upper cirrus that marked the boundary between the stratosphere and the zone of cloud and fog. Travis shifted the controls. He took the ship off its tangent and put it into gently curving "level" flight. The altimeter stood steady now. Its reading was twelve kilometers.

They had not hurried. At the signal "GO" some of Driscoll's bird dogs had, as well as the enthusiasts among the other entrants. All wanted to be the first in, as the bursts of violent fire from their reserve tubes showed. But as they fanned out, each toward the assigned section of the Venusian perimeter, Travis hung back. There was no rush. Most of the early birds would die, if history was any guide, and he did not choose to be among them. He saw that Driscoll cagily hung back too, and the strategy of it was plain. The foxy financier would wait to see which of his scouts survived, then follow in on his beam. If none survived—well, he could write the expedition off and go home again. There would always be another time.

"What do you hear?" snapped Travis, addressing Lorimer, who cringed in the radio booth listening through headphones to the other ships. The man's face was white and his eyes large and glazed, and at times he shuddered violently.

"I . . . it is a shambles down there," he said, licking his lips. "They're crashing right and left. You hear 'em reporting, then all of a sudden there's a scream . . . something about a pinnacle looming up in the mist . . . or else no sound but a burst of static . . . oh, sir, don't you think we'd better turn back?"

"We're not as crazy as we look," said Travis grimly. "But we're not turning tail yet."

He made other adjustments to the ship. Much of the momentum had been braked down by the air resistance. Now only one tube was jetting, and that at just a trickle to maintain steerageway. Travis pulled the levers that extruded the vessel's stubby wings and stabilizer fins. From here in the ship would have to be handled as a glider, but with ample reserve power at the throttle.

"Warm up the Maggy," he said, "and start shooting."

Hartley turned on the magnetoscope. That was an attachment that converted distances and bearings into light rays. Magnetronic tubes did the trick, throwing the resultant visual image onto a concave screen on the far side of the compartment. For a moment the screen showed nothing but haze, but as fog dissolves and pictures emerge from behind it, the haze melted. What was revealed was truly amazing.

The layer of frozen cirrus vanished. Several miles below its level there suddenly appeared what seemed to be an azure sea sprinkled with scattered rocky islets, arranged in long, twisting chains. But it was like no ocean man had ever looked upon. Its surface appeared hard and glistening, as if of ice, but that illusion of rigidity rose and fell in mighty pulses, now covering, again revealing more of the rough crags that jutted through it. There was a mirage-like quality about the whole scene, for nowhere did any of the islets show shores or beaches, though their jagged outlines expanded and contracted in phase with the heave of the strange crystalline sea.

"That must be your ionosphere," ventured Travis, squinting at the astonishing vista. "That is the phenomenon that distorts radio beams, though it seems to stop ours cold. But at least we are able to define it sharply. That is some help."

"Go down as close as you can and see what it does," suggested Hartley. "Maybe the angle of incidence has something to do with it. Maybe it will recede or vanish."

"Right-o," said Travis, and nosed the ship over into a dive.

Inexorably the gleaming surface seemed to rise up to meet them. It did not give

an iota, or fade. It was an absolute thing. The magnetoscope version may have been pure illusion, but what met their eyes appeared hard and unyielding. If Travis maintained his angle of dive, it could be but a matter of minutes until the ship would be put to the acid test. It would either crash against reality or else plunge through—*what?*

"Stop! Don't go on down. Please don't!" wailed Lorimer. Unnoticed he had stolen over and was staring wildly at the screen. "It's suicide, I tell you."

Travis eased off on the controls and halfway flattened out.

"What do you mean?" he asked, roughly.

Lorimer was thoroughly frightened. Trembling and whimpering he blurted out what he had been overhearing on the intership. Most of the other entrants were gone —all the independents and scores of Driscoll's ships. Many shattered themselves against hidden crags, a few reported themselves stuck in morasses that were about to engulf them. A number of the Driscoll vessels had mutinied and turned tail. Only one was down safely, and he was complaining to Driscoll and the umpire of his plight. He was being tossed about on a turbulent ocean and shipping water with every giant wave, for his altimeter had been at fault and he cracked his plates on striking. Venus was living up to her deadly reputation.

Lorimer never finished his piteous narration. He caught another glimpse of the pseudo-sea over Travis' shoulder. It was now but a matter of yards away and impact was at hand. Lorimer uttered a little moan and keeled over in a dead faint. Travis shot the slumped figure a contemptuous glance and flicked a lever.

"Shall I try the chute stunt?" asked Hartley, cheerfully, as Travis pulled the ship into a saving climb.

Travis shook his head.

"Too risky. I had rather we stick together. What about supersonic frequencies. Can you tune the Maggy to those? I doubt if anyone ever thought of using them for soundings."

"I can try," said Hartley, and proceeded to alter the magnostat setting. He was not sorry to hear the parachute alternative was out, since it had been a forlorn hope at best. One of them was to jump overboard with the automatic beacon, trusting to luck that he fell near a place where the ship could land. If radio failed there was still hope of sending up messages tied to sound-age balloncts. But snaring those, or even seeing them in the upper air would be a tough task for a fast-moving vessel.

The sonic soundings did work. The Maggy was not geared to convert that data to vision, but Hartley could interpret the echoes.

"That string of islands to the right," he said, "terminates in a sheer cliff. What I get from beyond it is very faint and much delayed. I think the precipice is a high escarpment or else the near wall of an immensely wide canyon. Try it there."

"Here goes," said Travis, grimly, and started the hazardous plunge.

The passing through the mysterious ionosphere was an impressive moment. They winced in spite of themselves at what looked like imminent deadly impact. Then the magnetoscope faded into a blur of milky blue, matching the formless haze of swirling mists that still showed on the standard visiscreen. The terrible uncertainty lasted for a second, and then the picture cleared again, this time with the strangely oscillating azure surface vaulting close overhead. Stretched out below them was a magnificent vista—incredibly weird, but as open to their gaze as any bird's-eye view ever obtained on Earth. Magnar had pierced the veil of the promised land. Venus was theirs!

The terrain was a magnificent jumble of Earth forms. The sierra that formed the crenellated top of the escarpment was lost above the ionosphere, but all else was there for the seeing. Steep talus slopes at the foot of the mighty cliff led down to what on a normal planet would have been a plain. But this plain was broken by scores of volcanic cones, many of which were shrouded in a curious pall of dirty brown—probably volcanic ash turned to falling mud by the ever present moisture. Elsewhere there were badly tilted plateaus and solitary mesas, between which meandered great rivers. Far away and to the right lay the sea. It was a real sea this time, and dappled with islands, great and small, many surrounded by reef-inclosed lagoons. The borderline between the sea and land was a vague marshy area where the rivers lost their identity in a maze of tortuous bayous, deltas and lagoons. Over all, wherever the ground was fairly level, there were vast forests of incredibly high trees.

Travis cruised along with his eye peeled for the best place to land, for once they were down they would have to leave the

ship and proceed as best they might in the amphibious crawler in the hold. Suddenly he caught sight of a curious arrangement of naked stones near the crest of one of the tilted plateaus.

"That's a funny outcropping," he began. "it looks for all the world like—"

The rest of the sentence died on his lips, for Lorimer came suddenly to life. The man was crazed with fear. He dashed across the room, screaming in hysterical frenzy.

"I won't let myself be murdered," he howled. "You are *not* going through with this madness!"

Travis and Hartley hurled themselves at him, but Hartley's flying tackle and Travis' vicious uppercut landed too late. The damage was done. Lorimer slumped back into unconsciousness, but it was by the eerie light reflected from the still glowing visiscreen. Everything else was dark. The magnetoscope was dead. Lorimer's wildly clawing hands had managed to yank half the switches on the panel open. The emergency lights slowly blinked on, but meter pointers still oscillated wildly, especially those having to do with the magnetic circuits. The abrupt interruption of the current had set up magnetronic eddies that would not die down for minutes.

"Get the supersonics going again if you can," said Travis between his teeth, "but it looks as if I'll have to land this baby blind."

He cursed fervently, trying to recall all the varied detail of the topography he had been studying. But there was no time for reasoned action. The altimeter reading stood at a bare kilometer, and was dropping fast. Before he could get the vessel under control it lurched heavily to the crackle of snapping branches and the scraping of treetops along the underside of the hull. The lurch turned into a bucking forward fall punctuated by many jolts and bumps. For a moment the ship seemed to tear itself clear but only to go into free fall. There was the briefest sickening instant of thudding impact, and their voyage was ended. With a squishy thud and a lazy roll, the ship came to rest. Travis and Hartley sat up in the respective corners into which they had been pitched and listened. To their ears came the steady lapping of water alongside their keel and the patter of raindrops on the roof.

"So this is Venus!" said Hartley, wryly.

"Uh-huh," grunted Travis, hauling himself to his feet. "So it seems. Better get the beacon set up. I'll take stock."

"Dismal place," was Hartley's comment. He was gluey mud to his midriff, having just climbed back into the entry port. Back of him was a curtain of hot rain that splashed to the ground only to rise instantly in clouds of steamy vapor. Dimly seen below was the crawler, itself mired to the hubs of the half-track rotors. Gurgling rivulets of water ran past it toward a larger stream they could hear roaring in the background. Vision stopped five yards away. Beyond that was only uncanny yellowish light, of equally mild intensity in every direction. Sogginess, and a dispiriting sort of amber semi-light was the keynote of Venus.

"What's the lay?" asked Travis. A distinctly chastened Lorimer peered over his shoulder.

"Trees, mostly. Unbelievable trees," said Hartley. "The California redwoods would be saplings here. If it's organics they want, we've got 'em. Shade doesn't seem to mean anything here with the light evenly diffused the way it is, because between the big trees there are all sorts of others, some with fruits like melons. And underneath everything is giant brush. Gosh. The going is plenty tough. I'm glad we don't have to survey this planet inch by inch."

"We'd better get going with the Maggy, then," said Travis. "Lorimer helped me set it up. All we need now is the pantos and your expert assistance."

Hartley washed the worst of the mud off him and then followed Travis up the ladder that led to the dome hatch. The instrument rested on the flatter part of the roof, shielded from the downpour by a hastily stretched tarpaulin. By it stood the box that was to receive the scale relief map the Maggy was to construct. It was a three-sided, open-topped affair, made of plates of transparent synthetic crystal. Travis fastened the pantograph's arms to lugs extending out of the magnar's side, and attached the quills at their tips. When he finished the rigging, the pantos extended out into the receiving box.

"We'd be sunk without our Maggy," said Travis, gazing at the veil of water that poured down on all sides. "Driscoll's men brought along a flock of infrared equipment and bolometers, but even with those they will find surveying this country a tough job. What the—"

The ship groaned and trembled beneath them, and they were shaken until their teeth rattled. They had to cling at the

swaying stanchions to keep from being tossed off the ship. But the earthquake, though severe, did not last long. It died out in a series of shuddering tremors and then there was quiet again—the watery quiet of splashing rain and gurgling ravines.

"Log the time of that," Travis called down the hatch to Lorimer.

"Ready to ride," announced Hartley, promptly putting the earthquake out of his mind and going back to the machine. "Let's make this first try accurate. They'll be more like to accept the later abbreviated ones if we can show them all our paces. I'll start with the underlying igneous rocks and fill in above as I go. Use black for that."

Travis filled the panto quills with a tarry substance that when exuded hardened quickly into a dark glass. That was the symbol that stood for granite in their code. He had other plastics for the other rocks—dark red for sandstone, olive green for shale, a dirty yellow for limestone, and so on. Hartley cut in the juice.

It took the Maggy an hour to lay the foundation for their work. The weaving pantos worked in and out in an ever widening arc as directed by the operator, squirting the colored plastics onto those laid before. Where volcanic necks intervened—and there were many—Hartley stepped up the current so as to force the reluctant radiation through, since when it was set to be reflected by basalt it would bounce back from the nearer surface. It took skill and understanding, but in the end they were well pleased with the result.

What stood in their box was the skeleton of what was to be a diorama of their surroundings—so far just the naked land on which they rested. One could walk around the crystal box and see just how far down the basic magma lay, and how the stratified rocks above were twisted, folded, and faulted. It was the geologist's dream come true. If they had been interested in ores, they would have had only to adjust the radiation to the proper setting and delineated it neatly in any special color they chose. As it was, in case of challenge, a simple drill rig could vertify their claim in a short time.

Hartley stopped long enough to have a smoke, though the sodden tobacco did not draw well. Then he changed his tuning slightly and ran in the mantle of soil and mud that clothed the bedrock. Toward the sea the alluvial muck was quite deep.

"Say," said Travis, "we have to put up with the ship's shadow, but what is that thing up there?"

He pointed to a narrow pointed, irregular wedge lying sidewise on the model's surface. It was a wedge of emptiness, in which nothing had registered. Except for its queer shape, it was the counterpart of the conical hollow in the very center of the model. That was the shadow cast vertically downward by the hull of the ship itself, since no amount of power would push the magnetrons through that thickness of alloy steel. Hence the pantos could only build an irregular empty cone topped off by the cigar-shaped upper contours of the vessel.

Hartley scrutinized the wedge of vacancy.

"It may be thrown by a moraine. Who knows, they may have had glaciers here once upon a time. Put the black pigment in and I'll test for granite."

The result he got was surprising.

"That's a funny thing," frowned Travis. "No action of ice or water ever left detritus like that, and I can't think of any normal upheaval that would cause it."

The cause of the shadow was granite, but in a form most unnatural. Far away from any known outcropping, it lay there in thin slabs. In the scale model they were of paper thinness, meaning that actually they were less than a yard thick. They were about ten times wider and occurred in all lengths up to several hundred yards. Not only did the slabs exist contrary to all known laws of granite cleavage, but their disposition was unorthodox. They lay roughly end to end, though by no means continuously since in spots there were wide vacancies. The pattern was that of a circuitous line that sometimes wound around low hills and at others went straight over them.

"What do you make of it?" asked Hartley. "The remnants of an old wall, perhaps, overthrown by an earthquake?"

"Too thin for a wall," shrugged Travis, "but let it go just now. When we extend the survey we will have to go up that way and then we'll take a look. Let's get on with the rest of the topography now. The light is getting dimmer and this rain is chilly."

Hartley put the Maggy to defining water, and the irregularities of the Venusian surface swiftly filled with clear plastic. Ravines turned into streams and saucerlike depressions into lakes. It was necessary for them to know the depths of the water hazards before they set out later in the crawler. And

then, after shifting the quills, the pantos began sketching in the vegetable matter, reporting only what was composed of cellulose. The forests took shape, but not as clusters of individual trees. The scale was too small for that. They came out as masses of greenish glass or as a thin glaze where only grasses were.

"Hey," exclaimed Travis, pointing. "What's that there—another shadow?"

A clean V-shaped vacancy had been left by the moving arms—a tapering semiconical tunnel through the tree mass where it intersected it, and barrenness beyond. It was far too regular to have occurred in nature.

The appearance of it puzzled Hartley, for it terminated where it met the face of a mesa he had run in earlier. That would indicate that the unseen obstruction was softer than the sedimentary rocks but harder than wood. Hartley twisted a dial. The shadow persisted. He twisted other dials and stepped up the power. Nothing went through. Whatever it was was exceedingly hard.

"A ship!" said Travis, as the outlines of it suddenly began to grow under the weaving pantos. It was a cigar-shaped affair, and beside it were a pair of flat objects of the same material, Its lines were familiar. It was Driscoll's *Pathfinder,* and the two other objects were his crawlers. Their steel effectively masked what lay beyond them.

"It must have just landed," said Hartley. "It couldn't have been there before or I couldn't have shown the mesa complete."

"He used our beam to come in on, the skunk," said Travis, huskily, and wheeled toward the hatch.

"What are you going to do"

"Call up the chief umpire and protest."

The umpire answered soothingly.

"Now, now, Mr. Travis—there is no need of distressing yourself. Venus is big. Tremendously big. There's room enough for both of you. I would suggest that you make contact and reach an agreement. One of you go one way, the other the other. After all, Mr. Driscoll has suffered terrific losses in ships and men and you can afford to be generous. As for that, there is nothing in the rules to cover a conflict of this sort. Later you may take your complaint to the courts, but it is beyond my jurisdiction. Moreover, no part of Venus belongs to you yet—not until you have made an adequate survey."

"But we *have,*" insisted Travis, raging. "My partner and I have developed an instrument that maps in total darkness, or through solid barriers for that matter. It is by means of that that we discovered this trespasser. I demand—"

"Ridiculous," said the umpire, crisply. "My assistants have reported conditions down there. You are overruled."

The click of the severed connection left Travis in a state of sputtering fury. The umpire's stupid action was not final, of course. A display of the map would show his error. But Driscoll's intrusion was not only not sportsmanlike, it had an ominous quality. For he had power and the cunning to exploit every technicality. It would have been bad enough to have him on the other side of the planet, for sooner or later they were bound to meet. But to enter into conflict at the very outset was bad. Very bad.

Travis strode to the safe and took out the rules. He scanned them, fuming, but in the end had to concede that the umpire was partly right. The rules were silent on the point. Everything hinged on the quality of the survey made. The best mapped claim would win, regardless of priority. Travis relaxed a little. In that field the Maggy should win hands down over the clumsy bolometric methods Driscoll would probably employ. Hartley agreed with him in deciding to ignore Driscoll for the time being, and carry on.

"Tomorrow," Travis declared that night, as the three of them were at supper, "we will stow the topographic map in the hold, dismantle the Maggy, and move on to the far edge of what we've already done and add another sheet from there. Lorimer will have to stay here to maintain outside communications. We'll keep in touch with him by means of our walkie-talkies."

Lorimer nodded agreement, when Travis suddenly sat bolt upright.

"*Psst!* Do you hear what I hear?"

Outside was the rush and hiss of the rain that never stopped falling, but over it was a louder sound—the rumble and grating of heavy gears and the burbling of an exhaust pipe half submerged in slime. A crawler was coming. Then they heard a hail, faint and unintelligible. The crawler noises grew louder, then ceased. Someone was rapping on the hull.

"In the ship there—ship, ahoy!" came the hail again. Travis rose scowling and spat viciously. The voice was Driscoll's.

Under the distress clauses of the interplanetary code, he could not be denied entrance, but Travis' greeting when he opened the lock was frosty.

"I can't keep *you* out," he said, "but your gorillas stay in the crawler."

He closed the door in the faces of the four strong-arm men that Driscoll carried with him whenever he visited one of the outplanets.

"Now what do you want?"

"I?" laughed Driscoll, with easy politeness. "Why, nothing for myself. I wanted to see if you were all right, that's all. This is a beastly place, you know."

"You know we are all right," said Travis, sternly. "You followed down on our beam and have doubtless been eavesdropping ever since. Quit beating about the bush and come to the point."

Driscoll raised an eyebrow in mild surprise.

"Your hostility amazes me. However, I did have another purpose in coming. My assistant umpire carelessly came off without a sufficient supply of report forms. He asked me to obtain some from your man."

Travis silently indicated Lorimer, who rose and went to his booth. Travis and Hartley looked on with steely eyes as Driscoll followed. Nothing apparently passed between them except the pad of government forms, but there was justification in being profoundly suspicious of anything Driscoll did. Driscoll pocketed the forms and uttered profuse thanks all around, but just as he was about to leave he added.

"As I am here, we may as well discuss our future relations, since it seems we are the only two to get through."

"Now it comes out," said Travis, with a curl of the lip. "Let's have it."

The two partners listened stonily as the financier unreeled his come-on talk. Venus, he said suavely, was too vast a field to be exploited on a shoestring . . . skyports must be established and immense amounts of capital devoted to transportation alone . . . the orderly development of the immense resources would require an army of technicians and astronomical amounts of specialized equipment. Simple pioneers could not cope with the problem. They simply cluttered up the field and impeded others.

"All right," snapped Travis. "So we impede. That is our right."

Driscoll was not upset. Look at the history of all such undertakings, he suggested, patiently. When did a pioneer ever cash in on his potentialities? Wouldn't it be better to accept the honor of having paved the way and then retire gracefully to easier fields? Would a million valors tempt them? Each, that is? No? Five million? Ten? Ten million valors was a lot of money. How much then? There need be no cutthroat race to stake out land. They could become partners in the big company by virtue of the transfer of their rights. Blocks of stock could be had in addition to the cash. Why not see the light?

"You're keeping us up," yawned Travis elaborately. "We've had a hard day. Good night."

Driscoll never dropped the mask of buttery smoothness, but as he bowed himself out there was an ominous glint in his eye.

"I never make an offer but once," he said.

"Fair enough," said Travis, and twisted the dogs home with a bang.

It was the earhquake that woke them up. It came in the middle of the night, just eleven hours after the shock of the afternoon. The din in the ship was terrific as every loose article banged against its neighbor. The dim standing lights flickered on and off and the bunks pitched wildly.

"We'd better get topside and check on the Maggy," said Hartley, blinking. "Rouse Lorimer to give us a hand."

But Lorimer was not in his bunk. They found him on the roof plate, since they wasted no time getting up there when they saw the hatch was open. It was Travis who was first up. He climbed through the hatch and stepped outside the shaft of light that stabbed upward into the misty haze of night. The beam from his sweeping torch fell upon no magnar or diorama, though the stanchions still stood swaying under the tarpaulin. The ruptured power lead still snaked across the slightly curving dome, but it terminated in a frayed end a yard away. There was nothing but a startled man in night clothes squinting into the flashlight's rays.

"I . . . I came up to secure the equipment you left here," stammered Lorimer. "I . . . it's not here!"

"We see it isn't," said Travis, grimly. He cast his light down onto the hull plates. They were beaded with moisture and streaked with rivulets, but a wide, glistening smear showed where something heavy had slid over.

"We'll have to allow for these earthquakes hereafter. They may be tidal," he said. His voice was harsh, but he held it rigidly even. There was no hint of reproach

or dismay. "It's too dark to assess the damage now. Let's go back to bed."

Down below, Hartley cautiously closed the door of their room behind them.

"You took it calmly."

"Why not?" asked Travis, wearily. "The rat pushed them over, of course, but there isn't a vestige of proof. The earthquake *might* have done it, you know. But it serves to tip us off to what to expect."

"Like?"

"That Driscoll's preparations for surveying this accursed fogbound land are not so hot . . . that Lorimer is by now on his payroll, and probably tipped him off to the excellent performance of the Maggy . . . that that umpire up in the stratosphere is probably not his creature after all, but just a dope. Otherwise Driscoll wouldn't have slogged over here through the mud to make us those fancy offers. I knew then that he was afraid of us, but I didn't expect him to act so quickly. He was slick about it, too. Our evidence is nothing but surmise that would be laughed out of any court in the world."

"Then you think we're licked?"

Travis gave a short, hard laugh.

"After we dig the Maggy out of the muck in the morning I'll tell you more. There's no use worrying about it now."

Neither one of them went to sleep at once. For Travis' part he felt a sense of relief that the first blow was struck. It was outright warfare now, even if veiled. It served to remove inhibitions. Neither Travis nor Hartley had come to Venus inspired by greed. Their motives were otherwise—a compound of scientific curiosity; pride in their miracle-working machine; and to some extent the love of adventure. Vaguely behind it all there was the sober conviction that the human race must have new frontiers or stifle. They needed money, to be sure, as did everyone, but only in reasonable quantities. Yet Driscoll's avarice was such that he was attempting to defraud them of even that. Very well. The only retaliation the land shark could appreciate would be in kind. His lies and sabotage must be countered with blows where they hurt—in the pocketbook. Travis considered that angle dreamily, and then dropped off to sleep.

The severity of their loss did not become apparent until well after the dim, slow-creeping dawn. They found the fragments of the diorama deep in the slush beside the ship. It was broken into three big chunks and marred with jagged cracks. Glumly Hartley fished the pieces out and washed them off. But except for a few chips irretrievably lost, it could be fitted together and cemented back into a serviceable map. The Maggy that lay under it was different—it was beyond salvage.

It must have fallen first and then received the impact of the heavy mass of glass. Its unique tubes and delicate coils were hopelessly smashed. There were spare parts on board to make good some of the damage, but to fully restore the instrument meant a trip back to Earth. That they could not afford to do. Departure now would forfeit all they had gained.

"We're sunk," said Hartley, gloomily.

"You're never sunk until you admit you are," reminded Travis, grimly. "We still have the helios and the bolos, and a few other tricks up our sleeve."

"Like?"

"I've got a hunch I want to play. We'll talk about that later."

They carried the topographic model inside and repaired it. Then they took photographs of it and locked it away in the hold. The Maggy they sadly consigned to a vacant bin. The advantage it gave them was gone. From then on they would have to explore Venus the hard way.

"Pile our stuff into the crawler, Hartley, and warm the motor up."

Then Travis called the chief umpire by redio. He spoke with restraint, but he was firm in his demands. The umpire had certain duties and he should perform them. The stratosphere was not the place. He should bring his ship down to the surface and park it between the two contestants. Travis went on to report Lorimer's panic on the flight down and his subsequent "carelessness" in tumbling their equipment overboard while ostensibly trying to secure it. He wanted Lorimer's immediate replacement, and a guard for the ship, for he intended leaving it to carry out the required field work. He did not propose to submit tamely to being stabbed in the back while he was gone, and concluded by reminding the umpire what happened to some negligent officials after the scandals on Mars. The umpire sputtered indignantly but said he would come on down.

An hour later Travis and Hartley piloted the slithering, splashing crawler away. Travis grinned at recalling the umpire's reaction when they showed him the map. The

fellow had been honest in the belief that they could not possibly have accomplished so much in so brief a time. In other respects he was simply a run-of-the-mine civil servant, more afraid of violating the letter of his instructions than any other thing. He was weak and not too bright, but he was not venal. They could go off into the fog and leave him behind as a buffer with a fair degree of confidence, for before leaving they had seen that he sent through to Earth a complete report of progress to date.

"I still don't get what you're driving at," said Hartley, peering into the dirty yellow mist that had replaced the rain. He was steering. His chart was a photo of the model, his compass a gyro set to an arbitrary base line called "pseudo-north." He ducked one of the numerous ponds and got back on the course. It led straight to the nearest part of the curious winding granite slab formation.

"You will," said Travis cheerfully. He was less depressed by the crippling of the Maggy than his partner. "You thought those pieces of granite were the remnants of a wall. Maybe, but my theory is that they are what is left of a road. Our own ancients built some pretty good roads. It could be that this planet is inhabited, or was. If so, and that long line of broken slabs is a road, all we have to do is follow where it leads and maybe we'll bump into something that will help us."

"Yes, but I still don't see—" objected Hartley, still puzzled, but he had to pull up suddenly. They had been plowing through the gigantic grasses that rose in clumps to untold heights above them, but for a few moments the visibility happened to be amazingly good. There were instants when they could see all of fifty feet. And there before them lay one of the old slabs.

It was canted sharply and riven by stalks of the bamboolike growth that had upset it, but it was obvious that Travis' guess had hit the mark. Despite the slimy moss that clung to the flat, tilted surface, they could not miss the two deep grooves—distinct, parallel furrows, the marks left on a hard road by generations of shod cartwheels. The distance between the treads was just short of six feet, indicating that whatever vehicles had made them were not dissimilar in size to those used by men.

"This does it," said Travis, triumphantly. "Now we're getting somewhere. Do you remember when Lorimer went crazy on the trip down and cut our lights? We were studying some funny rock shapes on the top of a plateau. It looked like the ruins of a town to me. If so, it can't be far from here. In any event, a road always runs from somewhere to somewhere else. Turn right and let's see where this one takes us."

They drove on. Often they lost the load, but for awhile the map set them straight again. As Hartley manipulated the crawler's heavy wheel, Travis unloaded some of his views.

"We are required to make a survey. One look around shows how tough that is. Astronomical observations or triangulation as done on Earth are out of the question. We work in a medium that is worse than dark. That means we will have to triangulate by heat beacons, picked up by bolometer or radar or supersonics, all crude methods. A heat source is necessarily large, not a pinpoint like light. Radio is fuzzy in definition except where metal is the target. Supersonics are entirely unreliable in an atmosphere as humid as this. Now that the Maggy is on the blink it's a case of doing the best we can, and that best has to be better than Driscoll's."

"Well?" said Hartley, sheering to avoid a monster geyser that loomed up ahead. It was one of a row that was spouting boiling water thunderously into an already saturated air. The crawler slumped over into a quagmire and then had to wait other minutes while one of the recurrent earthquakes shook itself out. Simultaneously the thudding roar of a distant crater vomiting into action boomed in their ears.

"What a planet," gritted Hartley, hanging on to the bucking wheel. "When you do survey it what have you got? I bet whole gobs of this topography comes and goes overnight."

"Not improbable," said Travis, unperturbed. "Which makes it all the more desirable that we establish ourselves geographically—by latitude and longitude—if it could be done. Since that is tough we are left with a bolo survey. How good that will be will depend a lot on how good our base line is. Back there in the jungle where we were, and Driscoll is, it would take a year just to cut out one through those big trees. You would still have to mark the end of the line with a well-defined monument. Now cities are a lot more distinctive than trees or lakes or mountain peaks, and if we can find a few there, we have our corners ready made. Not only that, but cities promise other rewards—caches of ancient treasure,

if the cities are as dead as the condition of this road seems to indicate they are."

Hartley nodded his agreement. By then they had progressed to the place where they were about to run off their Maggy built map.

"Just keep following the road," said Travis.

They continued to climb. After a bit the bamboo growth was less dense. It was also less gigantic, and the humid air was cooler, too, indicating a gain in altitude. The steamy vapor of the forest was replaced by the cold, swirling mists of the plateau. It was better going, and even seeing, in every way.

"Here we are," said Hartley, swerving to a stop as a rift in the fog showed what lay ahead, "and the dump is as dead as Babylon, from the looks of it."

Wreathed in trailers of clinging mist a high, crenellated wall stood athwart the road, pierced by a single, towered gate. To the left a part of it had been overthrown and tumbled forward into what may have been a moat, and chunks of rubble half filled the lower part of the gate. But Hartley surveyed it briefly and then slid in the crawler's gears. The clumsy vehicle grumbled, and then started to climb. In a moment it was through the relative gloom beneath the dark arch of the gate and clattering out into the streets of the dead city.

"Why, this town is half buried—like old Pompeii," exclaimed Travis, pointing. On either side there were rows of buildings, their lower floors submerged and with a mixture of mud and rubble masking the sills of the upper windows. "Its city walls have helped to hold the muck in or the rains should have washed it out long ago. No telling what we'll find when we go to digging."

They went on with their exploration. It was a fairly extensive town with many buildings of massive masonry, but it had been a dead city for a very, very long time. In the heart of it they came upon a great open square out of which protruded the upper portion of a sort of pyramid.

The pyramid was a six-sided affair, and curiously truncated. Slimy moss covered most of it, but they found handholds in crevices and managed to climb to the top. In that slanting surface they found a circular hole about a foot across, the only visible entrance, but when they crouched down and peered into it with sweeping flashlights they saw only a cavernous room half filled with stinking rain water.

"Well," said Travis, brightening and straightening up. "It looks as if we had something. Call up the umps on the walkie-talkie and tell him we have established our advanced base, but nothing more. Get it?"

The days that followed were ones of intensive exploration. They broke into the upper stories of the buried houses and dug out the volcanic ash and mud that filled them. They found bolted doors that had been forced, but beyond them they discovered passages leading to the nether parts of the house where the doomed Venusians had fled in fright when extinction came upon them.

Considering the prevalence of moisture, what they found was in a surprisingly good state of preservation. The original catastrophe must have been accompanied by dry heat, for the remains of the Venus creatures had dessicated to mummified cadavers easy to study. They were remarkably anthropoid, differing from man chiefly in that they were taller and more slender and also had six digits to the hand and foot. Beside them were an abundance of artifacts of every description, including weapons and armor. The armor was of incredible richness in many cases, being of gold and silver damascene inlay in hard steel, the whole crusted with gems of rare fire and color. In a single day the boys found wealth enough to satisfy the greediest.

Travis shortly left the work of cataloging the archeological finds to Hartley. It was imperative, now that they had come upon this antique city, that they stake out a claim that would stand up against any machination of the Driscoll crowd. Therefore he set up his instruments and began the patient accumulation of recorded data.

The diffusion of light and heat was practically perfect, and the unaided eye had but the vaguest notion where the sun rose or set or the path it followed. But the helio was an instrument of rare delicacy and Travis felt he could find the sun within an accuracy of a degree or two. The bolometer readings were less satisfactory, since the greatest heat recorded was in mid-afternoon, but between them he was able to roughly know when it was apparent noon and more or less what the altitude of the sun was. The time of sunrise and sunset was indefinite, in the absence of knowledge as to what the horizons were, so he could not

say what was the length of the actual day. But the noon to noon intervals, and the regularity of the tidal earthquakes gave him the length of the mean day. Venus revolved about its axis once in every twenty-two hours and a few minutes.

It was a triumph, of a sort.

"The latitude here is about sixty-five degrees," he told Hartley, jubilantly.

"Yeh. What about the longitude?"

"Zero—a hundred—anything I want to call it," grinned Travis. "Longitude is arbitrary. The first maps at home used the westernmost of the Azores for the kickoff point, thinking the world began there. Later the Americans used Washington, the French Paris, and so on until they got together on Greenwich. It doesn't matter really. The guy that states it first and hollers loudest wins."

But Travis' elation was short-lived. His figures were rough, but they had a clear trend. Every noon's altitude was greater than on the day before. Venus' axis was also tilted to the ecliptic. She had seasons. The sun was climbing in the sky, which meant it was spring. Travis groaned. He might have expected it, but it was a shock. He would have to track that elusive area of light for a full Venusian year—two-hundred and twenty-five terrestrial days—to establish the full curve. And it would take another year or two on top of that to make sure he was right. It was too long. Driscoll would beat him to the gun with an inferior survey. Once the deeds were passed the jig would be up.

He frowned as he considered another difficulty. He would win over topography with astronomical latitude, given time, but at that his latitude was fuzzy. Within a degree or so was not good enough. It left a probable error of up to a hundred miles. He was wasting time. He had better drop this nonsense and tackle the slow but surer way of piecemeal triangulation. It was when he broke that news to Hartley that Hartley brought better news to him.

"Say," he said, "today I found this picture in the cellar of a house. We ought to break into that pyramid."

He produced a thin sheet of bronze on which was engraved a view of the central square. The lines were very fine, as if etched, and they depicted the great plaza as it must have looked in its days of glory. The massive pyramid dominated the picture, and throngs of people swarmed in the square, holding their hands up in apparent supplication. A group of what were probably priests stood on the sloping platform made by the truncation, looking down on the masses below. It was apparently the day of some great festival, but the significant feature was that it showed a large portal leading into the pyramid at the level of the street. Its wide doors were open, and the men and women were streaming into it.

Travis studied the etching. The great door was delineated as being on the face of the pyramid immediately below the lowest side of the truncation, a great help.

"Well," he said, "this tells where to dig. Let's get going."

Digging in the heavy, compact mud was hard going, but luckily it was not far. They hastened the work by rigging up a scraper and used the crawler for a drag. In the end they also had to employ the clumsy vehicle to batter in the heavy bronze leaves of the door, for they were securely fastened from within. Then the doors crashed inward and the crawler lunged through into the dim interior. They stopped and turned on its spotlight.

"It's a temple, not a tomb," pronounced Hartley.

It was a huge cubical room, bare of all furnishing except a high altar reached by a flight of wide steps. Above the altar rose a pylon on whose face was a glittering sunburst, evidently of pure gold and richly set with jewels. About the altar stood a few vases, and on the floor lay the smashed remnants of others. From them spilled mounds of gems of all colors that sparkled brilliantly under the beam of light.

Travis swung the light around and swept the walls. On either side of the pylon were two huge embossed characters of the Venusian language, and around the entire room ran a wide frieze covered with ornamentation of interlaced hexagons and duodecagons. Every square foot of the walls underneath was given to elaborate mosaics. The theme of most were battles, confirming the opinion already reached that the Venusians were a warlike people. One big picture represented a ceremony which might have been a coronation. The most revealing of all was the last they came to.

It was done in dark-blue glazed tiles, and spangled with diamonds set in tiny silver rayed settings. Across it ran a wavy line of narrow gold ribbon, the highest point of which was adorned with a replica of the sun symbol.

"As I live and breathe," shouted Travis. "A map of the sky. I hope whoever laid out that sun track was an astronomer, not an artist," and he hastily rigged his camera.

It took hours to give the pyramid a thorough search. By means of winding stairs behind the pylon they came to upper levels, each being smaller than the one below. Most were the living quarters of the priests, and there were some dark cells for the sacrificial prisoners. Some day archeologists would translate the hieroglyphics and learn what those about to die had scribbled on the walls. There were other caches of treasure, too, but the greatest of all was the library. Here they found many scrolls, most of which were still in tubes sealed with wax. The majority were unintelligible, but they took away for study all that furnished clues in the way of illustrations and diagrams.

The topmost level was barred by another bronze door that defied all their efforts. In the end they had to get dynamite from the crawler and plant a charge. It was well they took ample cover on the floor below, for the aftermath of the explosion was unexpected. A freshet of trapped water came tumbling down the stairs and spread out on the floors of the rooms below. After a little it shrank to a dribble, and they climbed the slick, weedy steps to see the ultimate compartment.

Here they found another pylon and sunburst, though mossy from the dammed up water, presiding over a flat stone altar faintly illuminated by the light that shone through the hole overhead. Travis cast his flash about. Clinging algae showed the high watermark overhead. In the corners of the room were some strange instruments deeply incrusted with damp verdigris. They proved to be astrolabes, octants and transits of bizarre design, and one was fitted with a rude crystalline lens.

Travis and Hartley stood for a long time in sober thought, sizing up the place and trying to visualize the rites that had been conducted there.

"I think I'm beginning to get this," said Travis, suddenly. "It's clear enough these people were sunworshipers. This is a combined temple and observatory. The Egyptians did something of the kind, and so did the Aztecs. My hunch is that that hole is set so that at the summer solstice and no other time the sun would shine in here and illuminate this altar. What blood orgies followed then don't concern us now. The thing is that we have a check on my own orientation—that truncation up there must face south, and, if I can dope out just where that ray hit the altar, I'll have a verification of the altitude of the sun on that day. It's not all I need, but it is a help."

"The climate must have been a lot different in the old days," said Hartley, peering up through the gloom at the small, blurry spot of light.

"Of course it was. Vulcanism is the answer. For awhile this planet was stable, and then another era of mountain building set in. The scrap of geology we got from the Maggy showed us what the last upheavals have done. But it wasn't only earthquakes and eruptions that did the Venusians in. Extreme volcanic activity heaves a lot of water into the air. Our own ones do. They get it from the core of the earth where it is still held in solution in the general mass. The Venusians were losing cities fast and their skies were getting thicker. So the smarter ones of them got together and tried to escape. There must have been a very few advanced enough to conceive of spaceships—the Venusian Leonardo da Vincis, ahead of their time—but we know they managed it, and with a little better luck their race might have survived."

"All right," agreed Hartley. "But how does that help us?"

"We've got a swell observatory here—for Venus. The sun climbs higher every day. I'll keep checking it from the outside and you set up some equipment here. If your instruments register with mine the day it hits the solstice, my theory is proved. This will be the key point—longitude zero and whatever we find the latitude to be. Then we'll move on to another city and get another set of figures. It won't be long before we've whipped this thing."

That night they opened a bottle of their medical brandy and had a celebration. Then Hartley remembered that he hadn't made his routine report of the day. They didn't want well-meaning rescue parties come fumbling their way. He made the usual report that they were O.K., but finding the going slow.

"Ask how Driscoll is doing," prompted Travis, taking another swig.

"Not so good," said Hartley when he clicked off. "For us, that is. Umps says that he recalled the ships that got cold feet and

deserted him, claiming that since they had not yet actually reached Earth they were still part of his expedition. So now he has scores of more parties out. Umps says he has taken in hundreds of square miles of territory on the other side of ours. They're even talking of sending for more gangs to start clearing a landing field."

"That's bad," growled Travis. He wouldn't have grudged it to any other man, but with Driscoll it was different. Calling in extra help was hitting below the belt. "Did he mention finding any cities?"

"Nope, but he said that Driscoll looked pretty cocky. He's probably playing it cagey like we are."

"Uh, huh," grunted Travis. It wasn't good news. There were plenty of smart men on Driscoll's payroll, and there was no copyright on unraveling antique mysteries.

The summer solstice occurred two days later, but it took several days more to make sure, for the sun declined too imperceptibly to make certain of it with his crude tools. Travis spent the time poring over the documents unearthed in the sacerdotal library and the photostats of those dug up in Persia. The hieroglyphics were quite beyond him except for the numerals. They stopped him for awhile until he angrily noticed that he had persistently overlooked the fact that there were twelve characters employed and not the usual ten.

"Of course," he declared sourly," people with six fingers and toes *would* have a duodecimal based numerical system. I should have guessed it from their ornament, the shape of the pyramids, and all."

After that it did not take long to unravel the simpler computations left by the ancients, but in the absence of explanatory texts they remained incomprehensible operations in arithmetic.

Hartley broke open another scroll and unwound it on their makeshift desk.

"Say—" he shouted.

"A map!" exclaimed Travis, jumping to him. Then his hopes sank. It was a map, but of what? There was no shorelines or rivers or mountain ranges, nor was it another star map. It partook of the qualities of both. Sprinkled over it was a myriad of little black sunbursts, some smaller, some larger, and they were connected by a network of lines jagged as conventional lightning streaks. Each of the tiny symbols bore a pair of hieroglyphic characters, evidently the name of the place or thing, but he could not read them. Over all there was a light rectangular grid with numerals in fine script at their ends. Four of the horizontal lines were heavier than the others, and between the middle pair and in the center of the map were two double sunbursts done in gold leaf—one just beneath the upper line, one just above the lower.

They puzzled over the map for hours. Travis got out his code table of numerical values and ran in the translation of the figures. The vertical lines were marked with figures running up to three digits, the values being from zero to 999 on the duodecimal scale—just one short of the cube of the base. The horizontal lines had no number higher than 499 on the same scale. But all the values were consecutive, the horizontal series running from the top down, the vertical ones from right to left. The extreme upper and lower parts of the map were otherwise blank.

"It is a dead ringer for a Mercator projection," insisted Hartley.

"I know . . . wait!" Travis came suddenly out of his gloom into life, then laughed. "This shows what a fixed idea can do to you. We keep thinking in terms of three-hundred and sixty degrees to the circle. These people had a simpler system. They had one thousand seven hundred twenty-eight degrees to the full circle—the cube of twelve! Now it makes sense."

He snatched open a drawer and yanked out the photos they had taken inside the pyramid temple. One was the picture of the giant pylon above the main lower altar. He grabbed a pair of reading glasses and gave one to Hartley.

"See if we can match those characters anywhere. They may stand for the temple or the town. My hunch is that it will be in the middle latitudes, so you take the upper half and I'll take the lower."

In a little while Hartley let out a yelp. He found a matching pair. And a relentless search for the next half hour showed there was not another spot on the map with the same markings. That indicated that each of the small sunbursts stood for a pyramid, and the ragged lines between were probably the connecting highways. What they had was an ecclesiastical map of Venus.

There was much more to do before Travis was satisfied. He ran and dug out the measurements of the upper sacrificial chamber. He had all along suspected that

the slope of the truncated roof was such as to be normal to the midsummer rays. It was twenty-one degrees from the horizontal. He deducted that value from the observed maximum altitude of the sun, sixty-seven. The answer was forty-six. That wasn't what the figures on the map showed, but the Venusian scheme was different. Latitude according to their convention ran from pole to pole, not from equator both ways. Travis did some fast subtracting and converting from the tiny Venusian degrees to the fat terrestrial ones. The answer was cheering. It came out to forty-six.

"It's in the bag now," chuckled Travis. "Now it all clears up. These golden double sunbursts denote the happy land—the Twice-Blest, so to speak. They get sun in the zenith twice a year inside the tropics, so the priests could have twice as many bloody parties. My money says that the temples there will be flat-topped, too. Way up here they had to tilt the top to let the sun in on the one day a year it did come, and the angle gets worse the closer you get to the poles. Up above the arctic circles there are days they don't have sun at all, so the temples are few and far between. But now that we have the key, what are we waiting for? Let's get going."

"Where to? The ship?"

"Not yet. We'll stop by at the next town and do a little double-check."

Without the map it would have been easy to have missed the place altogether. It lay in a shallow valley and all that showed above the reedy mud was a sloping piece of flat rock that might easily have passed for an outcropping of bedrock. They unplugged the solar hole of its muck and dropped a suction hose into the sacrificial chamber of the buried pyramid. The crawler's pump was set to work and soon the dark water was gushing out. The boys ate their lunch, and then went to work with crowbars to enlarge the hole. It was unnecessary to blast their way to the great hall far down in the base. The upper room was also adorned with the temple's designating characters. They scraped the slime off them and compared them with the map. They tallied.

When they were up in the crawler again and sheltered from the rain that had now grown from a steady, miserable drizzle to a roaring torrent, they sat through another spine-wrenching earthquake. They had time to think and appraise the magnitude of the fortune that had befallen them.

"This means that we own this whole dog-goned planet?" asked Hartley, a little awe-struck.

Travis nodded.

"Hands down."

"But what are we going to do with it? I wouldn't live here if they gave it to me."

"I dunno. Kick Driscoll out and give it to the poor, I guess."

He grinned.

"I wouldn't live here either."

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black with impotent rage. "All right," he capitulated, spitting the words between his teeth. "I won't forget this, Jorust."

"But I must administer the laws," the woman said. "Why, Malsi! The rule of the *tarkomars* has always been unswerving honesty."

Malsi didn't answer. He scribbled a credit check for fifty thousand *sofals,* validated it, and gave the tag to Munn. After that he sent a parting glare around the cabin and stamped out.

"Well!" Bronson said. "Fifty grand! Tonight we eat!"

"May you be worthy of your fathers' names," Jorust murmured. At the valve she turned. "I'm afraid you've upset Malsi."

"Too bad," Munn said hypocritically.

Jorust moved her shoulders slightly. "Yes. You've upset Malsi. And Malsi represents the *tarkomars*—"

"What can he do about it?" Underhill asked.

"Nothing. The laws won't let him. But—it's nice to know the *tarkomars* aren't infallible. I think the word will get around."

Jorust winked gravely at Munn and departed, looking as innocent as a cat, and as potentially dangerous.

"Well!" Munn said. "What does that mean? The end of the *tarkomars'* rule, maybe?"

"Maybe," Bronson said. "I don't give a damn. I'm hungry and I want a beefsteak-mushroom. Where can we cash a check for fifty grand?"

BEAM PIRATE

By GEORGE O. SMITH

Lawyer Kingman made a bad mistake when he tried outsmarting engineers on engineering. He made a different deal, though, in trying to out-communicate the communication experts of Venus Equilateral!

MARK KINGMAN was in a fine state of nerves. He looked upon life and the people in it as one views the dark-brown taste of a hangover. It seemed to him at the present time that the Lord had forsaken him, for the entire and complete success of the solar beam had been left only to Venus Equilateral by a sheer fluke of nature. Certainly he, nor anyone else, could have foreseen the Channing Layer, that effectively blocked any attempt to pierce it with the strange, sub-level energy spectrum over which the driver tube and the power-transmission tube worked, representing the extremes of the so-called spectrum.

But Venus Equilateral, for their part, were well set. Ships plied the spaceways using their self-contained power only during atmospheric passage, and paid Venus Equilateral well for the privilege. The Relay Station itself was powered on the solar beam, and the costly shipments of potential power had been stopped. There were other relay stations that belonged to the communications company; Luna, Deimos and Phobos, and the six that circled Venus in lieu of a sattelite; all were powered by the solar beam. And the solar observatory on Mercury used but little power, so the needs of the observatory became the sole income for Terran Electric's planetary rights of the solar beam, since Mercury owned no air of its own.

Mark Kingman was beginning to feel the brunt of Channing's statement to the effect that legal-minded men were of little importance when it came to the technical life in space, where men's lives and livelihood depended more on technical skill than upon the legal pattern set for their protection in the complex society of planetary civilization.

It seemed that way. For instead of gaining their ends by legal restrictions on the power-transmission tube investigations, Terran Electric had lost their chance. Venus Equilateral had the legal right to tinker with the transmission tubes all they wanted to, and in return, Terran Electric held all of the planetary rights to Venus Equilateral's solar beam —which, in the domain covered by natural celestial bodies was about as valuable as the gold-mining rights to the crater Tycho.

And everyone knows that Luna, as a valuable piece of real estate, is useful only to Venus Equilateral as a place to plant the Lunar Relay Station that handled the Terran Beam and punched downward at the Heaviside Layer. Luna's valuable assets as to mineral rights consisted of a bit of talc—no longer used because of plastic engineering—and pumice—no longer used because of synthetic engineering.

And Kingman knew that only if Terra were not abundant in granite would the Lunar granite come in handy as a source of tombstones; and that made him writhe because when he thought of tombstones he also thought of his position with Terran Electric, which had been endangered because of his own legal connivances.

He swore vengeance.

So, like the man who doggedly makes the same mistake twice in a row, Kingman was going to move Heaven, Hell, and the three planets in an effort to take a swing at the same jaw that had caught his fist between its teeth before.

Out through the window of his office, he saw men toiling with the big tube on the far roof; the selfsame tube that had carried the terrific load of Venus Equilateral for ten days without interruption and with no apparent overload. Here on Terra, its output meter, operating through a dummy load, showed not the slightest inclination to leave the bottom peg and seek a home among the higher brackets.

The Channing Layer barred the passage of radiation of this so-called sub-etheric energy as effectively as the Heaviside Layer had blocked Interplanetary Communications for many, many years.

So Kingman cursed and hated himself for having backed himself into trouble. But

Kingman was not a complete fool. He was a brilliant attorney, and his record had placed him in the position of Assistant Chief Attorney for Terran Electric, which was a place of no mean importance. He had been licked on the other fellow's ground, with the other fellow's tools.

He picked up papers that carried, side by side, the relative assets of Venus Equilateral and Terran Electric. He studied them and thought deeply.

To his scrutiny, the figures seemed about equal, though perhaps the Interplanetary Communications Co. was a bit ahead.

But—he had been licked on the other fellow's ground with the other fellow's tools; he thought that if he fought on his own ground, with his own tools, he might be able to swing the deal.

And Terran Electric was not without a modicum of experience in the tools of the other fellow. His engineering department was brilliant and efficient, too; at least the equal of Channing and Franks and their gang of laughing gadgeteers. That not only gave him the edge of having his own tools and his own ground, but a bit of the other fellow's instruments too. Certainly his engineering department should be able to think of something good.

William Cartright, business manager for Venus Equilateral, interrupted Don and Walt in a discussion. He carried a page of stock market quotations and a few hundred feet of ticker tape.

Channing put down his pencil and leaned back in his chair. Walt did likewise, and said: "What's brewing?"

"Something I do not like."

"So?"

"The stock has been cutting didoes. We've been up and down so much it looks like a scenic railway."

"How do we come out?"

"Even, mostly; but from my experience, I would say that some bird is playing hooky with Venus Equilateral, Preferred. The common is even worse."

"Look bad?"

"Not too good. It is more than possible that some guy with money and the desire might be able to hook a large slice of V.E. Preferred. I don't think they could get control, but they could garner a plurality from stock outstanding on the planets. Most of the preferred stuff is in the possession of the folks out here, you know, but aside from yourself, Walt, and a couple of dozen of the executive personnel, the stock is spread pretty thin. The common stock has a lot of itself running around loose Outside. Look!"

Cartright began to run off the many yards of ticker tape. "Here, some guy dumped a boatload at Canalopsis, and some other guy glommed on to a large hunk at New York. The Northern Landing Exchange showed a bit of irregularity during the couple of hours of tinkering, and the irregularity was increased because some bright guy took advantage of it and sold short." He reeled off a few yards and then said: "Next, we have the opposite tale. Stuff was dumped at Northern Landing, and there was a wild flurry of bulling at Canalopsis. The Terran Exchange was just flopping up and down in a general upheaval, with the boys selling at the top and buying at the bottom. That makes money, you know, and if you can make the market tick your way—I mean control enough stuff —your purchases at the bottom send the market up a few points and then you dump it, and it drops again. It wouldn't take more than a point or two to make a guy rich, if you had enough stock and could continue to make the market vacillate."

"That's so," agreed Don. "Look, Bill, why don't we set one of our Terran agents to tinkering too? Get one of our best men to try to outguess the market. As long as it is being done systematically, he should be able to follow the other guy's thinking. That's the best we can do unless we go gestapo and start listening in on all the stuff that goes through the Station here."

"Would that help?"

"Yeah, but we'd all land in the hoosegow for breaking the secrecy legislation. You know. 'No one shall . . . intercept . . . transmit . . . eavesdrop upon . . . any message not intended for the listener, and . . . shall not . . . be party to the use of any information gained . . . et cetera.' That's us. The trouble is this lag between the worlds. They can prearrange their bulling and bearing ahead of time and play smart. With a little luck, they can get the three markets working just so—going up at Northern Landing; down at Terra; and up again at Canalopsis, just like waves in a rope. By playing fast and loose on paper, they can really run things hell, west, and crooked. Illegal, probably, since they each will no doubt claim to have all the stock in their possession, and yet will be able to sell and buy the same stock at the same time in three places."

"Sounds slightly precarious to me," objected Cartright.

"Not at all, if you figure things just right.

At a given instant, Pete may be buying at sixty-five on Venus; Joe may be selling like furious at seventy-one on Mars; and Jimmy may be bucking him up again by buying at sixty-five on Terra. Then the picture and the tickets catch up with one another, and Joe will start buying again at sixty-five, whilst Pete and Jimmy are selling at seventy-one. Once they get their periodicity running, they're able to tinker the market for quite a time. That's where your man comes in, Bill. Have him study the market and step in at the right time and grab us all a few cheap ones. Get me?"

"Sure," said Cartright. "I get it. In that way, we'll tend to stabilize the market, as well as getting the other guy's shares."

"Right. I'll leave it up to you. Handle this thing for the best interests of all of us."

Cartright smiled once again, and left with a thoughtful expression on his face. Channing picked up the miniature of the power-transmission tube and studied it as though the interruption had not occurred. "We'll have to use about four of these per stage," he said. "We'll have to use an input terminal tube to accept the stuff from the previous stage, drop it across the low-resistance load, resistance couple the stage to another output terminal tube where we can make use of the coupling circuits without feedback. From there into the next tube, with the high resistance load, and out of the power-putter-outer tube across the desk to the next four-bottle stage."

"That's getting complicated," said Walt. "Four tubes per stage of amplification."

"Sure. As the arts and sciences get more advanced, things tend to get more complicated."

"That's essentially correct," agreed Walt with a smile. "But you're foreguessing. We haven't even got a detector that will detect driver radiation."

"I know, and perhaps this thing will not work. But after all, we've got the tubes and we might as well think them out just in case. We'll detect driver radiation soon enough, and then we might as well have a few odd thoughts on how to amplify it for public use. Nothing would tickle me more than to increase those three circles on our letterhead to four. 'Planet to Planet, and Ship to Ship' is our hope. This one-way business is not to my liking. How much easier it would have been if I'd been able to squirt a call in to the Station when I was floating out there beyond Jove in that wrecked ship. That gave me to think, Walt. Driver-radiation detection is the answer."

"How so?"

"We'll use the detector to direct our radio beam, and the ship can have a similar gadget coupled to their beam, detecting a pair of drivers set at one hundred and eighty degrees from one another so the thrust won't upset the Station's celestial alignment. We can point one of them at the ship's course, even, making it easier for them."

"Speaking of direction," said Walt thoughtfully, "have you figured out why the solar beam is always pointing behind Sol?"

"I haven't given that much thought. I've always thought that it was due to the alignment plates not being in linear perfection so that the power beam bends. They can make the thing turn a perfect right angle, you know."

"Well, I've been toying with the resurrected heap you dropped into Lake Michigan a couple of months ago, and I've got a good one for you. You know how the beam seems to lock into place when we've got it turned to Sol, not enough to make it certain, but more than detectably directive?"

"Yep. We could toss out the motor control that keeps her face turned to the sun."

"That's what I was hoping to gain—" started Walt, but he stopped as the door opened and Arden entered, followed by a man and woman.

"Hello," said Watt in a tone of admiration.

"This is Jim Baler and his sister Christine," said Arden. "Baler, the guy with the worried look on his face is my legally wedded spouse—souse—no, spouse. And the guy with the boudoir gorilla gleam in his vulpine eye is that old vulture, Walt Franks."

Walt took the introduction in his stride and offered Christine his chair. Arden stuck her tongue out at him, but Walt shrugged it off, ignoring her. Channing shook hands with Jim Baler and then sought the "S" drawer of his file cabinet. He found the Scotch and the soda, and then grinned: "Should have the ice under 'I,' but its sort of perishable, and so we keep it in the refrigerator. Arden, breach the 'G' drawer and haul out the glasses, will you, please? I suppose we could refrigerate the whole cabinet, but it wouldn't sound right if people heard that we kept their mail on ice. Well—"

"Here's how, if we don't already know," said Walt, clinking glasses with Christine.

"Walt earned that 'wolf' title honestly," laughed Arden, "he likes to think. Frankly, he's a sheep in wolf's clothing!"

"What are his other attributes?" asked Christine.

"He invents. He scribbles a bit. He cuts doodles on tablecloths, and he manages to get in the way all the time," said Don. "We keep him around the place for his entertainment value."

"Why—"

"Quiet, Walter, or I shall explain the sordid details of the Walter Franks Electron Gun."

"What was that one?" asked Christine.

"You really wouldn't want to know," Walt told her.

"Oh, but I would."

"Yeah," growled Franks, "you would."

"Would you rather hear it from him, or me?" Arden asked.

"He'll tell me," said Christine. Her tone was positive and assured.

"And that'll take care of that," said Arden. "But I think we interrupted something. What were you saying about gaining, Walt?"

"Oh, I was saying that I was tinkering around the skyways with the *Anopheles*—that's the ship we hooked up with the solar beam for power, you know—and I got to wondering about that discrepancy. The faster you go, the greater is the angular displacement, and then with some measurements, I came up with a bugger factor—"

"Woah, goodness," laughed Christine. "What is a bugger factor?"

"You'll learn," said Arden, "that the boys out here have a language all their own. I've heard them use that one before. The bugger factor is a sort of multiplying, or dividing, or additive, or subtractive quantity. You perform the mathematical operation with the bugger factor, and your original wrong answer turns into the right answer."

"Is it accepted?"

"Oh, sure," answered Arden. "People don't realize it, but that string of 4's in the derivation of Bode's Law is a bugger factor."

"You," said Christine to Walt, "will also tell me what Bode's Law is—but later."

"O.K.," grinned Walt. "At any rate, I came up with a bugger factor that gave me to think. The darned solar beam points to where Sol actually is!"

"Whoosh!" exclaimed Channing. "You don't suppose we're tinkering with the medium that propagates the law of gravity?"

"I don't know. I wouldn't know. Has anyone ever tried to measure the velocity of propagation of the attraction of gravity?"

"No, and no one will until we find some way of modulating it."

Jim Baler smiled. "No wonder Barney was a little wacky when he got home. I come out here to take a look around and maybe give a lift to your gang on the transmission tube—and bump right into a discussion on the possibility of modulating the law of gravity!"

"Not the law, Jim, just the force."

"Now he gets technical about it. You started out a couple of months ago to detect driver radiation, and ended up by inventing a beam that draws power out of the sun. Think you'll ever find the driver radiation?"

"Probably."

"Yeah," drawled Arden. "And I'll bet a hat that when they do, they won't have any use for it. I've seen 'em work before."

"Incidentally," asked Christine, "you mentioned the *Anopheles,* and I think that is the first ship I've ever heard of that hasn't a feminine name. How come?"

"The mosquito that does the damage is the female," grinned Jim. "The Mojave spaceyards owns a sort of tender craft. It has a couple of big cranes on the top and a whole assortment of girders near the bottom. It looks like, and is also called: *The Praying Mantis.* Those are also female; at least the ones that aren't afraid of their shadow are."

Channing said suddenly: "Walt, have you tried the propagation-time of the solar beam on the *Anopheles?"*

"No. How would we go about doing that?"

"By leaving the controls set for 1-G and then starting the ship by swapping the tube energizing voltages from test power to operating power."

"Should that tell us?"

"Sure. As we know, the amount of energy radiated from the sun upon a spot the size of our solar tube is a matter of peanuts compared to the stuff we get out of it. Ergo, our beam must go to Sol and collect the power and draw it back down the beam. Measure the transit-time, and we'll know."

"That's an idea. I've got a micro-clock in the lab. We can measure it to a thousandth of a second. Anyone like to get shook up?"

"How?" asked Jim.

"Snapping from zero to 1-G all to oncet-like isn't too gentle. She'll knock your eyes out."

"Sounds like fun. I'm elected."

"So am I," insisted Christine.

"That's out," said Jim. "I know what he's talking about."

"So do I," said Arden. "Don't do it."

"Well, what better have you to offer?"

"You and I are going down to the Mall."

Channing groaned in mock anguish. "Here goes another closet full of female haberdashery. I'm going to close that corridor some day, or put a ceiling on the quantity of sales, or make it illegal to sell a woman anything unless she can prove that 'she has nothing to wear!'"

"That, I'd like to see," said Walt.

"You would," snorted Arden. "Come on, Chris. Better than the best of three worlds is available."

"That sort of leaves me all alone," said Don. "I'm going to look up Wes Farrell and see if he's been able to make anything worth looking at for a driver detector."

Don found Wes in the laboratory, poring over a complicated circuit. Farrell was muttering under his breath, and probing deep into the maze of haywire on the bench.

"Wes, when you get to talking to yourself, it's time to take a jaunt to Joe's."

"Not right now," objected Wes. "I haven't got that hollow leg that your gang seem to have developed. Besides, I'm on the trail of something."

"Yes?" Channing forgot about Joe's, and was all interest.

"I got a wiggle out of the meter there a few minutes ago. I'm trying to get another one."

"What was it like?"

"Wavered up and down like fierce for about a minute after I turned it on. Then it died quick, and has been dead ever since."

"Could it have been anything cockeyed with the instruments?"

"Nope. I've checked every part in this circuit, and everything is as good as it ever will be. No, something external caused that response."

"You've tried the solar tube with a dynode of the same alloy as the driver cathodes?"

"Uh-huh. Nothing at all. Oh, I'll take that back. I got a scratch. With a pre-meter gain of about four hundred decibels, I read three micromicroamperes. That was detected from a driver tube forty feet across the room, running at full output. I wondered for a minute whether the opposing driver was doing any cancellation, and so I took a chance and killed it for about a half second, but that wasn't it."

"Nuts. Does the stuff attenuate with distance?"

"As best as I could measure, it was something to the tune of inversely proportional to the cube root of the distance. That's normal for beams of a not-too-tight nature and it shows that the stuff isn't globularly radiated. But the amplifier gain was hanging right on the limit of possible amplification, and the meter was as sensitive as a meter can be made, I think. You couldn't talk from one end of Venus Equilateral to the other with a set like that."

"No, I guess you're right. Hey! Look!"

The meter took a sudden upswing, danced for a minute, and died once more.

"What have you got in there? What did you change?"

"Oh, I got foolish and tried a tuned circuit across the output of one of the miniature transmission tubes. It's far enough away from the big beams and stuff at the North end so that none of the leakage can cause trouble. Besides, I'm not getting anything like our beam transmissions."

Channing laughed. "Uh-huh, looks to me like you're not getting much of anything at all."

Farrell smiled wryly. "Yeah, that's so," he agreed. "But look, Don, Hertz himself didn't collect a transcontinental short-wave broadcast on his first attempt."

"If Hertz had been forced to rely upon vacuum tubes, his theories couldn't have been formulated, I think," said Channing. "At least, not by him. The easier frequencies and wave lengths are too long; a five hundred meter dipole can't be set up in a small room for laboratory tinkering. The kind of frequencies that come of dipoles a couple of feet long, such as Hertz used, are pretty hard to work with unless you have special tubes."

"Hertz had rotten detectors, too. But he made his experiments with spark-gap generators, which gave sufficient high-peak transients to induce spark-magnitude voltages in his receiving dipole."

"I'm not too certain of that tuned-circuit idea of yours, Wes. Go ahead and tinker to your heart's content, but remember that I'm skeptical of the standard resonance idea."

"Why?"

"Because we've been tinkering with driver tubes for years and years—and we have also been gadgeting up detectors, radio hoot-nannies, and stuff of the electronic

spectrum all the way from direct current to hard X rays, and we have yet to have anything react to driver radiation. Ergo, I'm skeptical."

The call bell rang for Channing, and he answered. It was Walt Franks.

"Don," he said with a laugh in his voice, though it was apparent that he felt slightly guilty about laughing, "got a 'gram from Addison, the project engineer on the solar beam from Terran Electric. Says: "Finally got through Channing Layer. Power by the megawatt-hour in great shape. But the atmosphere from the Channing Layer right down to the snout of the tube is a dull red scintillation. Something like the driver-tube trail—but it ionizes the atmosphere into ozone. Power by the megawatt, and ozone by the megaton."

"Ozone, hey? Lots of it?"

"Plenty, according to the rest of this. It looks to me like a sort of 'denatured' power system. There it is, all nice and potent, cheap, and unlicensed. But the second swallow going down meets the first one on the way back. Power they got—but the ozone they can't take; it's poisonous like a nice dose of chlorine. Poor Terran Electric!"

Mark Kingman sat in the control room of a ship of space, and worried. Below the dome, Venus covered three quarters of the sky, and it circled slowly as the Terran Electric ship oscillated gently up and down.

Before Kingman, on the desk, were pages of stock market reports. On a blackboard, a jagged line denoted the vacillation of Interplanetary Communications, Preferred. This phase of his plan was working to perfection. Gradually, he was burning share after share out of uninterested hands, by his depredations. Soon he would have enough stock in Interplanetary to stage a grand show, and then he could swing the thing his way.

His worry was not with this affair.

He gloated over that. His belief that he could beat the Venus Equilateral crowd if he fought them on his ground with his weapon was being corroborated. That, plus the fact that he was using some of Venus Equilateral's own thunder to do the job, was giving him to think that it was but a matter of time.

And, he laughed, the poor fools were not aware of their peril. Oh, some bird was trying to buck him, but he was not prepared as Kingman was, nor had he the source of information that Kingman had.

No, the thing that worried him was—

And there it came again! A wild, cacophonous wailing, like a whole orchestra of instruments playing at random, in random keys. It shook the very roots of the body, that terrible caterwauling, and not only did it shake the body, and the mind, but it actually caused loose plates to rattle in the bulkhead, and the cabinet doors followed in unison. The diapason stop was out for noon, and the racket filled the small control room and bounced back and forth, dinning at the ears of Kingman as it went echoing by. It penetrated to the upper reaches of the ship, and the crew gritted their teeth and cursed the necessity of being able to hear orders, for cotton plugs would have been a godsend and a curse simultaneously. Anything that would blot that racket out would also deafen them to the vital orders necessary to the operation of the ship in this precarious poising maneuver.

Two hundred sheer watts of undistorted audio power boomed forth in that tiny room—two hundred watts of pure, undistorted power to racket forth something that probably started out as sheer distortion.

And yet—

Faintly striving against that fearful racket there came a piping, flat-sounding human voice that said: "Kingman! I.C. Preferred just hit eighty-nine!"

Kingman scowled and punched on the intership teletype machine. Using the communicator set with that racket would have been impossible.

The radio man read the note that appeared on his 'type, and smiled grimly. He saw to his helio-mirror and sighted through a fine telescope at a spot on Venus, three thousand miles below. The helio began to send its flashing signal to this isolated spot near the Boiling River, and it was read, acknowledged, and repeated for safety's sake. The radio man flashed "O.K." and went back to his forty-seventh game of chess with the assistant pilot.

The helio man on the Boiling River read the message, grinned, and stepped to the telephone. He called a number at Northern Landing, and a tight beam sped across the Northern quarter of Venus to a man connected with the Venus Stock Market. The man nodded, and said to another: "Buy fifteen hundred—use the name of Ralph Gantry this time."

The stock purchased under the name of Ralph Gantry was signed, sealed, and delivered exactly fourteen minutes before the ticker projection on the grand wall of the

Exchange showed the I.C. Preferred stock turn the bottom curve and start upward by hitting Eighty-nine!

Back in the Terran Electric spaceship, Kingman's ears were still beset by the roaring, alien music.

He was sitting in his chair with his head between his hands, and did not see the man approaching the instrument panel with a pair of side-cutters in one hand. The man reached the panel, lifted it slightly, and reached forward. Then Kingman, hearing a slight imperfection in the wail of the speaker, looked up, jumped from his chair, and tackled the engineer.

"You blasted fool!" blazed Kingman. "You idiot!"

The music stopped at his third word, and the scream of his voice in the silence of the room almost scared Kingman himself.

"Mark, I'm going nuts. I can't stand that racket."

"You're going to stand it. Unless you can get something to cut it out."

"I can't. I'm not brilliant enough to devise a circuit that will cut that noise and still permit the entry of your fellow on Luna."

"Then you'll live with it."

"Mark, why can't we take that relay apart and work on it?"

"Ben, as far as I know, that relay is what Channing and his gang would give their whole Station for—and will, soon enough. I don't care how it works—or why."

"That's no way to make progress," objected Ben.

"Yeah, but we've got the only detector for driver radiation in this part of the universe! I'm not going to have it wrecked by a screwball engineer who doesn't give a care what's going on as long as he can tinker with something new and different. What do we know about it? Nothing. Therefore how can you learn anything about it? What would you look for? What would you expect to find?

"But where is that music coming from?"

"I don't know. As best as we can calculate, driver radiation propagates at the square of the speed of light, and that gives us a twenty-four minute edge on Venus Equilateral at the present time. For all I know, that music may be coming from the other end of the galaxy. At the square of the speed of light, you could talk to Centauri and get an answer in not too long."

"But if we had a chance to tinker with that relay, we might be able to find out what tunes it and then we can tune in the Lunar station and tune out that cat-melody."

"I'm running this show—and this relay is going to stay right where it is. I don't care a hoot about the control circuit it breaks; those contacts are set, somehow, so that we can detect driver radiation, and I'm not taking any chances of having it ruined."

"Can't you turn the gain down, at least?"

"Nope. We'd miss the gang at Luna."

The speaker spoke in that faint, flat-toned human voice again. It was easy to see that all that gain was necessary to back up the obviously faint response of Kingman's detector. The speaker said: "Kingman! Addison got power through the Channing Layer!"

That was all for about an hour. Meanwhile, the mewling tones burst forth again and again, assaulting the ears with intent to do damage. The messages were terse and for the most part, interesting. They gave the market reports; they intercepted the beam transmissions through the Terran Heaviside Layer before they got through the Lunar Relay Station, inspected the swiftly-moving tape and transmitted the juicy morsels to Kingman via the big driver tube that stood poised outside of the landed spaceship.

Kingman enjoyed an hour of celebration at Addison's success, and then the joy turned to bitter hate as the message came through telling of the ozone that resulted in the passage of the solar beam through the atmosphere. The success of the beam, and the utter impossibility of using it were far worse than the original fact of the beam's failure to pass the Channing Layer.

So Kingman went back to his stock market machinations, and applied himself diligently. And as the days wore on, Kingman's group manipulated their watered stock and ran the price up and down at will, and after each cycle Kingman's outfit owned just one bit more of Venus Equilateral.

Terran Electric would emerge from this battle with Interplanetary Communications as a subsidiary—with Kingman at the helm!

Walt Franks entered Channing's office with a wild-eyed look on his face. "Don! C^2!"

"Huh? What are you driving about?"

"C^2. The speed of light, squared!"

"Fast—but what is it?"

"The solar beam! It propagates at C^2!"

"Oh, now look Nothing can travel that fast!"

"Maybe this isn't *something!*"

"It has energy, energy has mass, mass cannot travel faster than the limiting speed of light."

"O.K. It can't do it. But unless my measurements are all haywire, the beam gets to Sol and back at C^2. I can prove it."

"Yeah? How? You couldn't possibly measure an interval so small as two times sixty-seven million miles—the radius of Venus' orbit—traversed at the speed of light squared."

"No. I admit that. But, Don, I got power out of Sirius!"

"You WHAT?" yelled Channing.

"Got power out of Sirius. And unless I can't use a micro-clock, it figured out from here to Sirius and back with the bacon in just about ninety-three percent of the speed of light, squared. Seven percent is well within the experimental error, I think, since we think of Sirius as being eight and one half light-years away. That's probably not too accurate as a matter of fact, but it's the figure I used. But here we are. Power from Sirius at C^2. Thirty-five billion miles per second! This stuff doesn't care how many laws it breaks!"

"Hm-m-m. C^2, hey? Oh, lovely. Look, Walt, let's run up and take a whirl at Wes Farrell's detector. I'm beginning to envision person-to-person service, ship-to-ship service, and possibly the first Interplanet Network. Imagine hearing a play-by-play description of the Interplanetary Series!"

"Wool-gathering," snorted Walt. "We've gotta catch our detector first!"

"Wes has something. First glimmer we've had. I think this is the time to rush into it with all feet and start pushing!"

"O.K. Who do we want?"

"Same gang as usual. Charley and Freddy Thomas, Walton, Jim Warren, Wes Farrell, of course, and you can get Jim Baler into it too. No, Walt, Christine Baler is not the kind of people who haul into a screwdriver meeting."

"I was merely thinking."

"I know. But you're needed, and if she were around, you'd be a total loss as far as cerebration."

"I like her."

"So does Barney Carroll."

"Um. Hadn't thought of that one. O.K., no Christine in our conference. I'll have Jeanne call the screwballs on the communicator."

They dribbled into Farrell's laboratory one by one, and then Don said:

"We have a detector. It is about as efficient as a slab of marble; only more so. We can get a tinkle of about ten micro-microamps at twenty feet distance from a driver tube using eight KVA input, which if we rate this in the usual spaceship efficiency, comes to about one-half G. That's about standard, for driver tubes, since they run four to a ship at 2-G total.

"Now, that is peanuts. We should be able to wind a megammeter around the peg at twenty feet. Why the red ironization comes out of the tube and hits our so-called detector, and the amount of ozone it creates is terrific. Yet we can't get a good reading out of it."

Walt asked: "Wes, what worked, finally?"

"A four-turn coil on a ceramic form, in series with a twenty micromicrofarad tuning condenser. I've been using a circular plate as a collector."

"Does it tune?"

"Nope. Funny thing, though, it won't work without a condenser in the circuit. I can use anything at all there without tuning it. But, darn it, the coil is the only one that works."

"That's slightly ridiculous. Have you reconstructed all factors?"

"Inductance, distributed capacity, and factor 'Q' are all right on the button with two more I made. Nothing dioding."

"Hm-m-m. This takes the cake. Nothing works, you say?"

"Nothing in my mind. I've tried about three hundred similar coils, and not a wiggle since. That's the only one."

Charley Thomas said: "Wes, have you tried your tube-amplifier system ahead of it?"

"Yes, and nothing at all happens then. I don't understand that one, because we know that any kind of input power will be re-beamed as similar power. I should think that the thing would amplify the same kind of stuff. I've used a solar beam miniature with a driver-alloy dynode in it, but that doesn't work either."

"Shucks," said Charley.

Don stood up and picked up the coil. "Fellows, I'm going to make a grand, old college try!"

"Yes?" asked Walt.

"I've got a grand idea, here. One, I'm still remembering that business of making the receptor dynode of the same alloy as

the transmitter cathode. I've a hunch that this thing is not so much an inductor, but something sour in the way of alloy-selectivity. If I'm right, I may cut this in half, and make two detectors, each of similar characteristics. Shall I?"

"Go ahead. We've established the fact that it is not the physico-electrical characteristics of that coil," said Wes. "I, too, took my chances and rewound that same wire on a couple of other forms. So it doesn't count as far as an inductance goes. So we can't ruin anything but the total make-up of the wire. I think we may be able to re-establish the wire by self-welding if your idea doesn't work. Now, unless we want to search the three planets for another hunk of wire to work like this one did, without knowing what to look for and therefore trying every foot of wire on three planets—"

"I'll cut it," said Channing with a smile. His cutters snipped, and then fastened one end of the wire to the coil, stripping the other portion off and handing it to Charley Thomas, who rewound it on another form.

"Now," said Don, "crank up your outfit and we'll try this hunk."

The beam tubes were fired up, and the smell of ozone began to make itself prominent. Channing cranked up the air-vent capacity to remove the ozone more swiftly. The men applied themselves to the detector circuits, and Wes, who recognized the results, said: "This hunk works. About as good as the whole coil."

Channing replaced the first coil with the second. Wes inspected the results and said: "Not quite as good, but it does work."

Walt nodded, and said: "Maybe it should be incandescent."

"That's a thought. Our solar beam uses an incandescent dynode." Channing removed the second coil and handed it to Freddy. "Take this thing down to the metallurgical lab and tell 'em to analyze it right down to the trace of sodium that seems to be in everything. I want quantitative figures on every element in it. Also, cut off a hunk and see if the crystallographic expert can detect anything peculiar, that would make this hunk of copper wire different from any other hunk. Follow?"

"Yup," said Freddy. "We'll also start making similar alloys with a few percent variation on the composition metals. Right?"

"That's the ticket. Wes, can we evacuate a tube with this wire in it and make it incandescent?"

"Let's evacuate the room. I like that stunt."

"You're the engineer on this trick. Do it your way."

"Thanks. I get the program, all right. Why not have Charley build us a modulator for the driver tube? Then when we get this thing perfected, we'll have some way to test it."

"Can do, Charley?"

"I think so. It's easy. We'll just modulate the cathode current of the electron guns that bombard the big cathode. That is the way we adjust for drive; it should work as a means of amplitude-modulation."

"O.K.," said Channing. "We're on the rails for this one. We'll get together as soon as our various laboratories have their answers and have something further to work with."

Above Venus, Mark Kingman was listening to the wailing roar of alien symphony and cursing because he could hardly hear the voice of his Lunar accomplice saying: "V. E. Preferred just hit one hundred and two!"

Fifteen minutes before the peak hit Northern Landing, share after share was being dumped, and in addition, a message was on its way back to Terra. It went on the regular beam transmission through Venus Equilateral, carefully coded. It said:

"Have sufficient stock and additional collateral to ply the first pressure. Apply phase two of plan. Kingman."

In the ten hours that followed, Venus Equilateral stock went down and down and down, passed through a deep valley, and started up again. Up it went. Up past the one hundred mark, up into the one hundred and fifties. It hovered there for a bit, and then started up again. Kingman's crowd was offering twice the market for the preferred stock, and there was little to have. It took a short-time dip at three hundred, and the few minutes of decline smoked a lot of stock out of the hands of people who looked upon this chance as the right time to make their money and get out.

Then the stock began to climb again, and those people who thought that the price had been at its peak-and-passed were angrily trying to buy in again. That accelerated the climb, but Kingman's crowd, operating on Venus and on Mars and on Terra were buying only, and selling not one share of Interplanetary Communications.

Terran Electric stock took a gradual slide, for Kingman's crowd needed additional

money. But the slide was slow, and controlled, and manipulated only for the purpose of selling short. Terran Electric stock eventually remained in the hands of Kingman's crowd, though its value was lessened.

I. C. Preferred hit four hundred and sixty-eight, and hovered. It vacillated around that point for another hour, and the market closed at four hundred and sixty-nine and three-eighths.

Kingman looked at his watch and smiled. He reached forth and cut the dinning sound of the cacophony with a vicious twist of the gain knob. Silence reigned in the spaceship; grand, peaceful silence. Kingman, his nerves frayed by the mental activity, and the brain-addling music-from-nowhere, took a hot shower and went to bed.

He locked the panel of the control room first, however. He wanted no engineer tinkering with his pet relay.

Cartright came into Channing's living room with a long face. "It's bad," he said. "Bad."

"What's bad?"

"Oh I, like the rest of the fools, got caught in his trap."

"Who's trap?"

"The wild man who is trying to rock Interplanetary Communications on its axis."

"Well, how?"

"They started to buy like mad, and I held out. Then the thing dropped a few points, and I tried to take a bit of profit, so that we could go on bolstering the market. They grabbed off my stock, and then, just like *that!* the market was on the way up again and I couldn't find more than a few odd shares to buy back."

"Don't worry," said Channing, "I don't think anybody is big enough to really damage us. Someone is playing fast and loose, making a killing. When this is over, we'll still be in business."

"I know, Don, but whose business will it be? Ours, or theirs?"

"Is it that bad?"

"I'm afraid so. One more flurry like today, and they'll be able to tow Venus Equilateral out and make Mars Equilateral out of it, and we won't be able to say a word."

"Hm-m-m. You aren't beaten?"

"Not until the last drop. I'm not bragging when I say that I'm as good an operator as the next. My trouble today was not being a mind reader. I'd been doing all right, so far. I've been letting them ride it up and down with little opposition, and taking off a few here and there as I rode along. Guessing their purpose, I could count on their next move. But this banging the market sky-high has me stumped, or had me stumped for just long enough for me to throw our shirt into the ring. They took that quick—our shirt, I mean."

"That's too bad. What are you leading up to."

"There are a lot of unstable stocks that a guy could really play hob with; therefore their only reason for picking on J. C. is to gain control!"

"Pirates?"

"Something like that."

"Well," said Channing in a resigned voice, "about all we can do is to do our best and hope we are smart enough to outguess 'em. That's your job, Cartright. A long time ago I. C. made their decision concerning the executive branch of this company, and they elected to run the joint with technical men. The business aspects and all are under the control of men who know what they're fighting. We hire business men, just like business men hire engineers, and for the opposite purpose. You're the best we could get, you know that. If those guys get Venus Equilateral, they'll get you too. But if you do your best and fail, we can't shoot you in the back for it. We'll all go down together. So keep pitching, and remember that we're behind you all the way!"

"Can we float a bit of a loan?"

"Sure, if it's needed. I'd prefer Interplanetary Transport if they'll do business with us. We've been in the way of helping them out a couple of million dollar losses; they might be anxious to reciprocate."

"O.K., I have your power of attorney anyway. If I get in a real crack, I'll scream for I. T. to help. Right?"

"Right."

Cartright left, and as he closed the door, Channing's face took on a deep, long look. He was worried. He put his head between his hands and thought himself into a tight circle from which he could not escape. He did not hear Walt Franks enter behind Arden and Christine.

"Hey!" said Walt. "Why the gloom? I bear glad tidings!"

Channing looked up. "Spill," he said with a glum smile. "I could use some glad tidings right now."

"The lab just reported that that hunk of copper wire was impure. Got a couple of traces of other metals in it. They've been concocting other samples with more and

less of the impurities, and Wes has been trying them as they were ready. We've got the detector working to the point where Freddy has taken the *Relay Girl* out for a run around the Station at about five hundred miles and Wes is still getting responses!"

"Is he? How can he know?"

"Charley rigged the *Relay Girl's* drivers up with a voice modulator, and Freddy is jerking his head off because the acceleration is directly proportional to the amplitude of his voice, saying: 'One, two, three, four, test.' Don, have you ever wondered why an engineer can't count above four?"

"Walt, does it take a lot of soup to modulate a driver?" asked Arden.

"Peanuts," grinned Franks. "This stuff is not like the good old radio; the power for driving the spaceship is derived mostly from the total disintegration of the cathode and the voltage applied to the various electrodes is merely for the purpose of setting up the proper field-conditions. They draw quite a bit of current, but nothing like that which would be required to lift a spaceship at 2-G for a hundred hours flat."

He turned back to Channing and said: "What's the gloom?"

Don smiled in a thoughtful fashion. "It doesn't look so bad right now. Some gang of stock market cutthroats have been playing football with Interplanetary Communications, and Cartright says he is sure that they want control. It's bad; he's been clipped a couple of hard licks, but we're still pitching. The thing I'm wondering right now is this: Shall we toss this possibility of person-to-person and ship-to-ship just at the right turn of the market to bollix up their machinations, or shall we keep it to ourselves and start up another company with this as our basis?"

"Can we screw 'em up by announcing it?"

"Sure. If we drop this idea just at the time they're trying to run the stock down, it'll cross over and take a run up, which will set 'em on their ear."

"I don't know. Better keep it to ourselves for a bit. Something may turn up. But come on down to Wes' lab and give a look at our new set-up."

Channing stood up and stretched. "I'm on the way," he said.

Farrell was working furiously on the detector device, and as they entered, he indicated the meter that was jumping up and down. Out of a speaker there was coming the full, rich tones of Freddy Thomas' voice, announcing solemnly: "One, two, three, four, test."

Wes said: "I'm getting better. Charley has been bettering his modulator now, and the detector is three notches closer to whatever this level of energy uses for resonance. Evacuation and the subsequent incandescence was the answer. Another thing I've found is this—" Farrell held up a flat disk about six inches in diameter with a sawcut from edge to center. "As you see, the color of this disk changes from this edge of the cut, varying all the way around the disk to the other side of the cut. The darned disk is a varying alloy—I've discovered how to tune the driver-radiation through a limited range. We hit resonance of the *Relay Girl's* driver system just off the end of this disk. But watch while I turn the one in the set."

Farrell took a large knob and turned it. Freddy's voice faded, and became toneless. Farrell returned the knob to its original position and the reception cleared again. "Inside of that tube there," said Farrell, "I have a selsyn turning the disk, and a small induction loop that heats the whole disk to incandescence A brush makes contact with the edge of the disk and the axle makes the center connection. Apparently this stuff passes on a direct line right through the metal, for it works."

"Have you tried any kind of tube amplification?" asked Don.

"Not yet? Shall we?"

"Why not? I can still think that the relay tube will amplify if we hook up the input and output loads correctly."

"I've got a tube already hooked up," said Walt. "It's mounted in a panel with the proper voltage supplies and so on. If your resistance calculation is correct, we should get about three thousand voltage gain out of it."

He left, and returned in a few minutes with the tube. They busied themselves with the connections, and then Don applied the power.

Nothing happened.

"Run a line from the output back through a voltage-dividing circuit to the in-phase anode," suggested Walt.

"How much?"

"Put a potentiometer in it so we can vary the amount of voltage. After all, Barney Carroll said that the application of voltage in phase with the transmitted power is necessary to the operation of the relay tube. In transmission of D. C., it is necessary to jack up the in-phase anode with a bit of D. C. That's in-phase with a vengeance!"

"What you're thinking is that whatever this sub-level energy is, some of it should be applied to the in-phase anode?"

"Nothing but."

The cabinet provided a standard potentiometer, and as Don advanced the amount of fed-back voltage, Freddy's voice came booming in louder and louder. It overloaded the audio amplifier, and they turned the gain down as Channing increased the in-phase voltage more and more. It passed through a peak, and then Don left the potentiometer for maximum.

"Wes," he said, "call Freddy and tell him to take off for Terra, at about 4-G. Have the gang upstairs hang a ship beam on him so we can follow him with suggestions. Too bad we can't get there immediately."

"What I'm worrying about is the available gain," said Wes. "That thing may have given us a gain of a couple of thousand, but that isn't going to be enough. Not for planet-to-planet service."

"Later on we may be able to hang a couple of those things in cascade," suggested Walt.

"Or if not, I know a trick that will work —one that will enable us to get a gain of several million."

"Yeah? Mirrors, or adding machines? You can't make an audio amplifier of a three million gain."

"I know it—at least not a practical one. But, we can probably use our audio modulater to modulate a radio frequency, and then modulate the driver with the RF. Then we hang a receiver on to the detector gadget here, and collect RF, modulated, just like a standard radio transmission, and amplify it at RF, convert it to IF, and detect it to AF. Catch?"

"Sure. And that gives me another thought. It might just be possible, if your idea is possible, that we can insert several frequencies of RF into the tube and hang a number of receivers on the detector, here."

Arden laughed. "From crystal detection to multiplex transmission in ten easy lessons."

"Call Charley and have him begin to concoct an RF stage for tube-modulation," said Dan. "It'll have to be fairly low—not higher than a couple of megacycles so that he can handle it with the stuff he has available, but as long as we can hear his dulcet voice chirping that 'one, two, three, four, test,' of his, we can also have ship-to-Station two-way. We squirt out on the ship beam, and he talks back on the driver transmitter."

"That'll be a help," observed Wes. "I'd been thinking by habit that we had no way to get word back from the *Relay Girl.*"

"So had I," confessed Walt. "But we'll get over that."

"Meanwhile, I'm going to get this alloy-selectivity investigated right down to the last nub," said Don. "Charley's gang can take it from all angles and record their findings. We'll ultimately be able to devise a system of mathematics for it from their analysis. You won't mind being bothered every fifteen minutes for the first week, will you, Wes? They'll be running to you in your sleep with questions until they catch up with your present level of ability in this job. Eventually they'll pass you up, and then you'll have to study their results in order to keep up."

"Suits me. That sounds like my job anyway."

"It is. O.K., Arden, I'm coming now."

"It's about time," smiled Arden. "I wouldn't haul you away from your first love excepting that I know you haven't eaten in eight or nine hours. I've got roast knolla."

"S'long, fellows," grinned Channing. "I'm one of the few guys in the inner system who can forget that the knolla is the North Venus brother to a pussy cat."

"I could feed you pussy cat and you'd eat it if I called it knolla," said Arden. "But you wouldn't eat knolla if I called it pussy cat."

"You can't tell the difference," said Walt.

"Tell me," asked Wes, "what does pussy cat taste like?"

"I mean by visual inspection. Unfortunately, there can be no comparison drawn. The Venusians will eat pussy cat, but they look upon the knolla as a household pet, not fit for Venusian consumption. So unless we revive one of the Ancient Martians, who may have the intestinal fortitude—better known as guts—to eat both and describe the difference, we may never know," offered Walt.

"Stop it," said Arden, "or you'll have my dinner spoiled for me."

"All the more for me," said Don. "Now, when I was in college, we cooked the dean's cat and offered it to some pledges under the name of knolla. They said—"

"We'll have macaroni for dinner," said Arden firmly. "I'll never be able to look a fried knolla in the pan again without wondering whether it caterwauled on some back

fence in Chicago, or a Palanortis Whitewood on Venus."

She left, and Channing went with her, arguing as he went to the effect that she should develop a disregard for things like their discussion. As a matter of interest, Channing had his roast knolla that evening, so he must have convinced Arden.

Walt said: "And then there were three. Christine, has our little pre-dinner talk disturbed your appetite?"

"Not in the least," said the girl stoutly. "I wouldn't care whether it was knolla or pussy cat. I've been on Mars so long that either one of the little felines is alien to me. What have you to offer?"

"We'll hit Joe's for dinner, which is the best bar in sixty million miles today. Later we may take in the latest celluloid epic, and then there will be a bit of mixed wrestling in the ballroom."

"Mixed wres— Oh, you mean dancing. Sounds interesting. Now?"

"Now. Wes, what are you heading for?"

"Oh, I've got on a cockeyed schedule," said Wes. "I've been catching my sleep at more and more out-of-phase hours until this is not too long after breakfast for me. You birds all speak of 'Tomorrow,' 'Today' and 'Yesterday' out here, but this business of having no sun to come up in the morning, and the electric lights running all the time has me all bollixed up."

"That daily nomenclature is purely from habit," said Walt. "As you know, we run three equal shifts of eight hours each, and therefore what may be 'Morning' to Bill is 'Noon' to James and 'Night' to Harry. It is meaningless, but habitual to speak of 'Morning' when you mean 'Just after I get up!" Follow me?"

"Yup. This, then, is morning to me. Run along and have fun."

"We'll try," said Walt.

"We will," said Christine.

Farrell grinned as they left. He looked at Walt, and said: "You will!"

Walt wondered whether he should have questioned Wes about that remark, but he did not. Several hours later, Walt wondered how Wes could have been so right.

Interplanetary Communications, Preferred, starting in its long climb as soon as the markets opened on the following day. Cartright, following his orders and his experience, held onto whatever stock he had, and bought whatever stock was tossed his way. Several times he was on the verge of asking Interplanetary Transport for monetary assistance, but the real need never materialized.

Kingman alternately cursed the whining music and cheered the pyramiding stock. About the only thing that kept Kingman from going completely mad was the fact that the alien music was not continuous, but it came and went in stretches of anything from five to fifty minutes, with varied periods of silence in between selections.

Up and up it went, and Kingman was seeing the final, victorious coup in the offing. A week more, and Venus Equilateral would belong to Terran Electric. The beam from Terra was silent, save for a few items of interest not connected with the market. Kingman's men were given the latest news, baseball scores, and so forth, among which items was another message to Channing from the solar beam project engineer, Addison. They had about given up. Nothing they could do would prevent the formation of ozone by the ton as they drew power by the kilowatt from Sol.

On Venus Equilateral, Channing said: "Ask Charley what his radio frequency is."

Ten minutes later, at the speed of light, the ship beam reached the *Relay Girl* and the message clicked out. Charley Thomas read it, and spoke into the microphone. The *Relay Girl* bucked unmercifully, as the voice amplitude made the acceleration change. Then at the speed of light, squared, the answer came back in less than a twinkle.

"Seventeen hundred kilocycles."

Channing began to turn the tuner of the radio receiver. The band was dead, and Channing laughed. "This is going to be tricky, what with the necessity of aligning both the driver-alloy disk and the radio receiver. Takes time."

He changed the alloy disk in minute increments, and waved the tuner across that portion of the band that would most likely cover the experimental error of Charley Thomas' frequency measurement. A burst of sound caught his ear, was lost for a moment, and then swelled into perfect tune as Don worked over the double tuning system.

"Whoa, Tillie," said Walt. "That sounds like—"

"Like hell."

"Right. Just what I was going to say. Is it music?"

"Could be. I've got a slightly tin ear, you know."

"Mine is fair," said Walt, "but it might as well be solid brass as far as this mess

is concerned. It's music of some kind, you can tell it by the rhythm. But the scale isn't anything like I've heard before."

"Might be a phonograph record played backward," suggested Wes.

"I doubt it," said Channing seriously. "The swell of that orchestra indicates a number of instruments—of some cockeyed kind or other—the point I'm making is that anything of a classical or semi-classical nature played backwards on a phonograph actually sounds passable. I can't say the same for most of the classics, believe it or not. This sounds strictly from hunger."

"Or hatred. Maybe the musicians do not like one another."

"Then they should lambaste one another with their instruments, not paste the sub-ether with 'em."

Channing lit a cigarette. "Mark the dial," he said. "Both of 'em. I've got to get in touch with the Thomas Boys."

Walt marked the dials and tuned for the *Relay Girl.* He found it coming in not far from the other setting. Charley was speaking, and they tuned in near the middle of his speech.

"—this thing so that it will not buck like a scenic railway finding the fourth derivative of space with respect to time. For my nontechnical listeners, that is none other than the better known term: Jerkiness. We applied the modulation in to the first driver anode—the little circular one right above the cathode. I don't know whether this is getting out as it should, so I'm going to talk along for the next fifteen minutes straight until I hear from you. Then we're switching over and repeating. Can you hear me?"

Channing cut the gain down to a whisper and put a message on the beam, confirming his reception. Ten minutes later, Charley changed his set speech, and said: "Good! Too bad we haven't got one of those receivers here, or we could make this a two-way with some action. Now listen, Don. My idiot brother says he can make the beam transmit without the drive. Unfortunately, I am not a driver expert like he is and so I can not remonstrate with the half-wit, So, and right now, we're cutting the supply voltage to the final focusing anode. Whoops! I just floated off the floor and the mike cable is all tangled up in my feet. This free stuff is not as simple as the old fiction writers claimed it was. Things are floating all over the place like mad. The accelerometer says exactly zero, and so you tell me if we are getting out. We're going back on 1-G so that we can sit down again. That's better! Though the idiot—it's a shame to be forced to admit that one of your family is half-witted—didn't wait until we were in position to fall. I almost landed on my head—which is where he was dropped as an infant. How was it? Did you hear my manly voice whilst we were going free? Say 'No' so that my idiot brother will not have anything to say about his brilliant mind. I'm out of breath and we're going back on that home recording of Freddy saying, and I will let him quote, via acetate."

The sound of a phonograph pickup being dropped on a record preceded Freddy's voice saying: "One, two, three, four, test. One—"

Channing cut the gain again. "That red-hot. I thought he was talking all this time."

"Not the Thomas Boys. That comes under the classification of 'Work' which they shun unless they can not get any kind of machine to do it for them," laughed Walt.

Walt turned the dials back to the unearthly symphony. "At C^2, that might come from Sirius," he said, listening carefully. "Sounds like Chinese."

"Oh, now look," objected Don. "What off earth would a Chinese Symphony be doing with a driver-modulator system?"

"Broadcasting—"

"Nope. The idea of detecting driver radiation is as old as the hills. If any culture had uncovered driver-beam transmission we'd all have been aware of it. So far as I know, we, and the Terran Electric crowd are the only ones who have had any kind of an opportunity of working with this sub-etheric energy. Wes, have you another miniature of the relay tube handy?"

"Sure. Why?"

"I'm going to see if this stuff can be made directional. You're bringing whatever it is into the place on a collector plate and slamming it into an input-terminal power transmission tube. It goes across the table to the relay tube, and is amplified, and then is tossed across more table to the load-terminal tube, where the output is impressed across your allow-disk. Right?"

"Right."

"I want another relay tube. I'm going to use it for a directional input-beam, aligning it in the same way that Jim Baler and Barney Carroll did their first find. The one that sucked power out of the electric light,

turned off the city hall, and so on. Follow?"

"Perfectly. Yes, I've got a couple of them. But they're not connected like Walt's set-up was."

"Well, that three-tube system was built on sheer guesswork some time ago. We can tap in the relay tube and haul out a set of cables that will energize the first relay tube. Hang her on gymbals, and we'll go hunting."

"Shall I have Freddy return?"

"Yes. We'll have Walton's gang build us up about six of these things just as we have here."

"That won't take long," said Walt. "They're working on the tuning disks now, and we should have 'em by the time that Freddy gets back here."

"But this wild and woolly music. It's alien!"

Wes turned from the teletype and dug in the cabinet for the extra relay tube. He up-ended the chassis containing Walt's set-up, and began to attach leads to the voltage supply, cabling them neatly and in accordance with the restrictions on lead-capacities that some of the anodes needed.

"It's alien," said Wes in agreement. "I'm going to shut it off now whilst I tinker with the tube."

"Wait a minute," said Don. "Here comes Jim. Maybe he'd like to hear it."

"Hear what?" asked Jim Baler, entering the door.

"We've a Sirian Symphony," explained Don, giving Jim the background all the way up to the present time. Jim listened, and then said:

"As an engineer, I've never heard anything like that in my life before. But, as a student of ancient languages and arts and sciences, I have. That's Chinese."

"Oh no!"

"Oh yes. But definitely."

"Ye gods!"

"I agree."

"But how—where—"

"And/or when?"

Channing sat down hard. He stared at the wall for minutes. "Chinese. Oh, great, slippery, green, howling catfish!" He picked up the phone and called the decoupler room where the messages were sorted as to destination upon their entry into the Station.

"Ben? Look, have we a ship beam on anything of Chinese registry?"

Ben said wait a minute while he checked. He returned and said: "Four. *The Lady of Cathay, The Mandarin's Daughter, The Dragoness,* and *The Mongol Maid.* Why?"

"Put a ship message on each of 'em, asking whether they have any Chinese music aboard."

"And then what? They can't answer."

"Make this an experimental request. If any of them are using any recordings of Chinese music, tell them to have their electronics chief replace the phonograph pick-up with a microphone—disturbing absolutely nothing—and to reply if we could hear them. Get me?"

"Can you? Hear 'em, I mean."

"We hear something, and Jim says it's Chinese."

"It's worth a try, then. See you later."

"Will they?" asked Jim, interested in the workings of this idea.

"Sure. Ever since we steered the *Empress of Kolain* out of the grease with the first Station-to-ship beam, all three of the interplanetary companies have been more than willing to co-operate with any of our requests as long as we precede the message with the explanation that it is experimental. They'll do anything we ask 'em to, short of scuttling the ship."

"Nice hookup. Hope it works."

"So do I," said Wes. "This, I mean. I've got our directional gadget hooked up."

"Turn it on."

The wailing of the music came in strong and clear. Wes turned the input tube on its support, and the music passed through a loud peak and died off on the far side to almost zero. Wes adjusted the mobile tube for maximum response and tightened a small set-screw. "It's a shame we haven't got a nice set of protractors and gymbals," said Wes. "I had to tear into the desk lamp to get that flexible pipe."

"Small loss. She's directional, all right. We'll get the gymbals later. Right now I don't want this turned off because we may hear something interesting— Whoops, it went off by itself!"

"Could we dare to hope?" asked Walt.

"Let's wait. They'll have to hitch the microphone on—"

"Give 'em a half hour, at least."

Twenty minutes later, a strange voice came through the speaker. "Dr. Channing, of Venus Equilateral? We have been contacted by your organization with respect to the possibility of your being able to hear the intership communicator system. This seems impossible, but we are not ones to question. The fact that you are in posses-

sion of the facts concerning our love of the music of our ancestors is proof enough that you must have heard something. I presume that further information is desired, and I shall wait for your return. This is Ling Kai Chaing, Captain of the *Lady of Cathay.*"

"We got it!" chortled Don. He did a war dance in the lab, and the rest followed suit. Bits of wire and oddments of one sort or another filled the air as the big, grown-up men did a spring dance and strewed the floor with daintily thrown junk. At the height of the racket, Arden and Christine entered—no, they were literally hauled in, completely surrounded, and almost smothered.

Arden fought herself free and said: "What's going on?"

"We've just contacted a ship in space."

"So what? Haven't we been doing that for months?"

"They've just contacted us, too!"

"Huh?" asked Arden, her eyes widening.

"None other. Wait, I'll get an answer." Don contacted Ben, in the decoupler room and said: "Ben, hang this line on the *Lady of Cathay's* beam, will you?"

"Is that her?"

"None other."

"Go ahead. She's coupled."

Don pecked out a message. "Please describe the intercommunication system used by your ship in detail. We have heard you, and you are, therefore, the first ship to contact Venus Equilateral from space flight. Congratulations."

Eight minutes later, the voice of Captain Chaing returned.

"Dr. Channing, I am handing the microphone over to Ling Wey, our electronics engineer, who knows the system in and out. He'll work with you on this problem."

Ling Wey said: "Hello. This is great. But I'm not certain of how it's done. The output of the phono system is very small, and certainly not capable of putting out the power necessary to reach Venus Equilateral from here. However, we are using a wired-radio system at seventeen hundred and ninety kilocycles in lieu of the usual cable system. The crew all like music, and, therefore, we play the recordings of our ancestral musicians almost incessantly."

He paused for breath, and Channing said: "Walt, tap out a message concerning the lead-length of the cables that supply the driver anodes. Have him check them for radio frequency pick-up."

"I get it." The 'type began to click.

This communication was carried on for hour after hour. Don's guess was right, it turned out; the lead that connected the first driver anode was tuned in wave length to almost perfect resonance with the frequency of the wired-radio communicator system. Channing thanked them profusely, and they rang off. Soon afterward the wailing, moaning music returned to the air.

"Wonder if we could get that without the radio," said Don.

"Don't know. We can pack the juice on in the amplifier and see, now that we have it tuned on the button," said Walt.

"It won't," said Wes. "'Ive been all across the dial of the alloy disk. Nothing at all."

"O.K. Well, so what if it doesn't. We've still got us a ship-to-ship communications system. Hey! What was that?"

That was a pale, flat-sounding human voice saying: "Kingman! I. C. Pfd. has been at six hundred and nine for two days, now. What's our next move?"

"Kingman!" exploded Channing. "Why, the . . . the—"

"Careful," warned Arden. "There's a lady present."

"Huh?"

"Her," said Arden pointing at Christine.

"Wait," said Walt. "Maybe he'll answer."

Don fiddled with the dials for a full fifteen minutes, keeping them very close to the spot marked, hoping that Kingman's answer might not be too far out of tune. He gave up as the answer was not to be found, and returned to the original setting. Ten minutes later the voice said: "Kingman, where in the devil is my answer? I want to know what our next move is. There isn't a bit of V. E. stock available. Why don't you answer?"

Then, dimly in the background, a voice spoke to the operator of the instrument. "Kingman's probably asleep. That terrible moaning-stuff he's been complaining about makes him turn the thing off as soon as the day's market is off. He—and the rest of that crew—can't stand it. You'll have to wait until tomorrow's market opens before he'll be listening."

"O.K., said the operator, and the set went silent.

"Kingman!" said Don Channing in a low, hard voice. "So he's the bright guy behind this. I get it now. Somehow he discovered a detector, and he's been playing the market by getting the quotations by

sub-etheric transmission at C^2 and beating the Northern Landing market. And did you get the latest bit of luck? Kingman still is unaware of the fact that we are onto him—and have perfected this C^2 transmission. Here's where he gets caught in his own trap!"

"How?"

"We're not in too bad shape for making good, honest two-days out of this sub-ether stuff. Kingman is still behind because he hasn't got a return line back to Terra—he must be using our beams, which gives us a return edge."

"Why not get him tossed into the clink?" asked Walt.

"That's practical. Besides, we're sitting in a great big pile of gravy right now. We can prove Kingman has been violating the law to embezzle, mulct, steal, commit grand larceny, and so on. We're going to take a swing at Mr. Kingman and at Terran Electric that they won't forget. We can't lose, because I'm not a good sportsman when I find that I've been tricked. We're going after Kingman in our own fashion—and if we lose, we're going to go tinhorn and cry for the gendarmes. I'm not proud."

"What do you plan?"

"We'll put a horde of folks on the decoupler files with the code Terran Electric filed with the government office. We can get the code, and I'm of the opinion that Kingman wouldn't take time to figure out a new code, so he'll be using the old one. As soon as we find a message in that code that is either addressed to Terran Electric or pertains to I. C. Preferred stock, we'll start to intercept all such messages and use 'em for our own good."

"That's illegal."

"Yup. But who's gonna holler? Kingman can't."

"But suppose we lose—"

"Kingman will not know we've been tricking him. Besides, we can't lose with two ways to get ahead of his one. Come on, fellows, we've got to help get the extra receivers together."

"How are we going to cut through the Channing Layer?"

"Easy. That's where we'll use the relay stations at Luna, Deimos, and the six portables that circle Venus."

"I get it. O.K., Don, let's get to work."

"Right. And we'd better leave a guy here to collect any more interesting messages from Kingman's crowd. We can tune it right on to Kingman's alloy, and that'll make that music take the back seat. We need narrower selectivity."

"Charley's gang will find that if it is to be found," smiled Walt. "We're really on the track this time."

A dead-black spaceship drifted across the face of Luna slowly, and its course, though apparently aimless, was the course of a ship or a man hunting something. It darted swiftly, poised, and then zigzagged forward, each straight-side of the jagged course shorter than the one before. It passed over a small crater and stopped short.

Below, there was a spaceship parked beside a driver tube anchored in the pumice.

The black ship hovered above the parked ship, and then dropped sharply, ramming the observation dome on top with its harder, smaller bottom. The two ships tilted and fell, crushing the ground near the poised driver tube. Space-suited men assaulted the damaged ship, broke into the bent and battered plates and emerged with three men who were still struggling to get their suits adjusted properly.

Channing's men took over the poised driver tube, and in their own ship, Walt spoke over a sub-ether radio of a different type.

"Don, we got him."

Don answered from Venus Equilateral, and his voice had no more delay than if he had been within a hundred yards of the crater on Luna.

"Good. Stay there; you can contact the Lunar Relay Station from there. Wes is all ready on Station 3 above Northern Landing with his set, and Jim Baler is at the Deimos Station."

"Hi, Walt," came Wes' voice.

"Hi," said Jim Baler.

"Hello, fellows," said Walt. "Well, what cooks?"

"Kingman," said Channing. "You've got your orders, Walt. When Kingman expects the market to go down, tell him it's still going up. We'll figure this out as we go along, but he won't like it at all."

There was silence for a few minutes, and then Don said: "Walt, Kingman's sent a message through the Northern Landing station now. He says: 'Dump a block to shake the suckers loose. This is pyramided so high that they should all climb on the sell-wagon; running the market down of their own weight. When it hits a new low,

we'll buy, and this time end up by having control.' When he starts to run the market down, you buy at Terra."

Minutes later, the message hit the Terra market, and Kingman's agent started to unload. The stock started off at six hundred and nine, and it soon dropped to five-forty. It hovered there, and then took another gradual slide to four-seventy. Then a message came through the regular beam station which Walt intercepted, decoded with Terran Electric's own code book, and read as follows:

"I. C. Preferred coming in fast. Shall we wait?"

Walt chuckled and spoke into the driver modulator. "Kingman," he said, "some wiseacre is still buying. I. C. Preferred is running at seven-ninety! What now?"

In the Venus Equilateral radio, he said: "Don, I just fixed him."

From Venus, Wes said: "You sure did. He's just giving orders to drop some more stock. This is too dirty to be funny, but Kingman asked for it. I know him. He's got this set up so that no one can do a thing on this market program without orders from him. Too bad we can't withhold the Northern Landing quotations from him."

The Lunar Beam brought forth another message intended for Kingman's interceptor at Luna. "I. C. Preferred is dropping like a plummet. When can we buy?"

Walt smiled and said into Kingman's setup: "Kingman! I. C. Preferred is now at eight hundred and seventy!"

Not many minutes later, Wes said: "That was foul, Walt. He's just given orders to run the market down at any cost."

"O.K.," said Walt. "But he's going to go nuts when the Northern Landing Exchange starts down without ever getting to that mythical nine hundred."

"Let him wonder. Meanwhile, fellows, let's run ourselves a slide on Terran Electric. Sell the works!"

Terran Electric started down just as I. C. Preferred took its third drop. It passed three hundred, and started down the two hundred numbers. Walt shook his head and said to Kingman: "Kingman, we're getting results now. She's dropped back again—to six hundred and three." Then he said: "Kingman, someone is playing hob with T. E. Preferred. She's up to two hundred and fifty-one."

To Don, Walt said: "Good thing that Kingman has that Sinese Chimphony for a bit of good music, or he'd recognize my voice."

"Which way will he jump?" laughed Don. "That was a slick bit of Kingman-baiting, Walt, in spite of your voice."

"Kingman's taking it hard," said Wes. "He says to drop some of his own stock so that they can use the money to manipulate the I. C. stuff."

"O.K.," said Jim Baler. This looks like a good time to think about buying some of Kingman's stuff. Right?"

"Wait until his sales hit bottom," said Don. "Walt, tip us off."

"O.K. What now?"

"Wait a bit and see."

Terran Electric went down some more, and then Jim said: "Now?"

"Now," answered Don. "You too, Wes."

"Me too?" asked Walt.

"You continue to sell!"

"Oh-oh," said Wes. "Kingman is wild. He wants to know what's the matter with the market."

"Tell him that your end is all right, and that I. C. Preferred is still going down, but steady."

"O.K.," said Walt.

The hours went by, and Kingman became more and more frantic. I. C. Preferred would be reported at five hundred, but the Northern Landing Exchange said two-ten. Meanwhile, Terran Electric—

"Oh, lovely," said Don. "Beautiful. We've got us a reciprocating market now, better than Kingman's. When she's up at Terra, they're down at Canalopsis and Northern Landing—and vice versa. Keep it pumping, boys, and we'll get enough money to buy Kingman out."

The vacillating market went on, and Don's gang continued to rock the Terran Electric stock. Then as the market was about to close for the day, Don said: "Sell 'em short!"

Terran Electric stock appeared on the market in great quantities. Its value dropped down and down and down, and Kingman, appraised of the fall by Walt, who magnified it by not less than two to one, apparently got frantic again, for he said:

"We're running short. Drop your Terran stock to bolster the I. C. job!"

"Oh, lovely," said Don.

"You said that."

"I repeat it. Look, fellows, gather all

the T. E. Preferred and I. C. Preferred you can. Walt, tell him that Terran Electric is dropping fast, so he'll scuttle more of his stuff, and we'll pick it up slowly enough so that we won't raise the market. How're we fixed for I. C. Preferred?"

"Not too bad. Can we hit him once more?"

"Go ahead," said Don.

"Kingman," said Walt. "Kingman! Hell's loose. The Interplanetary Bureau of Criminal Investigations has just decided to look into the Interplanetary Communications angle. They wanted to know who's trying to grab control of a public carrier!"

Minutes later, Wes said: "Oh, Brother Myrtle. That did it. He just gave orders to drop the whole thing short!"

"Wait until I. C. Preferred hits a new low and then we'll buy," said Don.

The flurry dropped I. C. Preferred to forty-seven, and then the agents of Venus Equilateral stepped forth and offered to buy, at the market, all offered stock.

They did.

Then, as no more stock was offered, Interplanetary Communications Preferred rose sharply to ninety-four and stabilized at that figure. Terran Electric stock went through a valley, made by Kingman's sales, and then headed up, made by purchases on Terra, on Mars, and on Venus.

Don said: "Look, fellows, this has gone far enough. We have control again, and a goodly hunk of Terran Electric as well. Enough, I think, to force them to behave like a good little company and stay out of other people's hair. Let's all get together and celebrate."

"Right," echoed the men.

A month later, Joe's was the scene of a big banquet. Barney Carroll stood up and said:

"Ladies and gentlemen, we all know why we're here and what we're celebrating. So I won't have to recount the whole affair. We all think Don Channing is a great guy, and Walt Franks is not far behind, if any. I'm pretty likable myself, and my lifelong sparring partner Jim Baler is no smelt, either. And so on, ad infinitum.

"But, ladies and gentlemen, Don Channing has a dark, deep, dire, desperate phase of his life, one that he will be remembered and cursed for; one that will weigh about his neck like a milestone—or is it millstone?—for all his life.

"Benefactor though he is, this much you shall know; I still say that there is no place in the inner system for a man who has made this possible. Listen!"

Barney raised his hand, and an attendant turned a standard, living room model radio receiver on. It burst into sound immediately.

"Ladies and gentlemen, the Interplanetary Network now brings to you the Whitewood Nutsies Program. Karven and Norwal, the Venusian Songbirds; Thalla; and Lilas, in person, coming to you from the jungles of Palanortis, on Venus, by courtesy of the Interplanet Foods Co. of Battle Creek, Michigan!

"Ladies and gentlemen, Whitewood Nutsies are *GOOD* for you—"

Walt Franks said to Christine: "Let's get out of here."

Christine inspected Walt carefully. Then nodded. "Yup," she grinnned. "Even you sound better than the Interplanetary Network!"

For once, Walt did not argue, having gained his point.

THE WEDGE

By ISAAC ASIMOV

Gold's funny stuff. Perfectly useless, so far as practical work goes, but the men of the Foundation could make it do things in the psychological-political field.

"Never let your sense of morals prevent you from doing what is right!"
—Salvor Hardin.

LATHAN DEVERS was completely a-lather when the call reached his receiver—which proves that the old bromide about telemessages and the bathtub holds true even in the dark, hard space of the Galactic Periphery.

Luckily that part of a free-lance trade ship which is not given over to miscellaneous merchandise is extremely snug. So much so, that the shower, hot water included, is located in a two-by-four cubby, ten feet from the control panels, Devers heard the staccato rattle of the receiver quite plainly.

Dripping suds and a curse, he stepped out to adjust the vocal, and three hours later a second trade ship was alongside, and a grinning youngster entered through the air tube between the ships.

Devers rattled his best chair forward and perched himself on the pilot-swivel.

"What've you been doing, Gorm?" he asked, darkly. "Chased me all the way from the Foundation?"

Les Gorm broke out a cigarette, and shook his head definitely, "Me? Not a chance. I'm just the sucker who happened to land on Glyptal IV the day after the mail. So they sent me out after you with this."

The tiny, gleaming sphere changed hands, and Gorm added, "It's confidential. Supersecret. Can't be trusted to the sub-ether, and all that. Or so I gather. At least, it's a Personal Capsule, and won't open for anyone but you."

Devers regarded the capsule distastefully, "I can see that. And I never knew one of these to hold good news, either."

It opened in his hand and the thin, transparent tape unrolled stiffly. His eyes swept the message quickly, for when the last of the tape had emerged, the first was already brown and crinkled. In a minute and a half it had turned black and, molecule by molecule, fallen apart."

Devers grunted hollowly, "Oh, *Galaxy!*"

Les Gorm said quietly, "Can I help somehow? Or is it too secret?"

"It will bear telling, since you're of the Guild. I've got to go to Askone."

"That place? How come?"

"They've imprisoned a trader. But keep it to yourself."

Gorm's expression jolted into anger, "Imprisoned! That's against the Convention."

"So is interference with local politics."

"Oh! Is that what he did?" Gorm meditated. "Who's the trader? Anyone I know?"

"No!" said Devers sharply, and Gorm accepted the implication and asked no further questions.

Devers was up and staring darkly out the visiplate. He mumbled strong expressions at that part of the misty lens-form that was the body of the Galaxy, then said loudly, "Damnedest mess! I'm way behind quota."

Light broke on Gorm's intellect, "Hey, friend, Askone is a closed area."

"That's right. You can't sell as much as a penknife on Askone. They won't buy atomic gadgets of *any* sort. With my quota dead on its feet, it's murder to go there."

"Can't get out of it?"

Devers shook his head absently, "I know the fellow involved. Can't walk out on a friend. What of it? I am in the hands of the Galactic Spirit, and walk cheerfully in the way he points out."

Gorm said blankly, "Huh?"

Devers looked at him, and laughed shortly, "I forgot. You never read the 'Book of the Spirit,' did you?"

"Never heard of it?" said Gorm, curtly.

"Well, you would if *you'd* had a religious training."

"Religious training? For the *priesthood?*" Gorm was profoundly shocked.

"Afraid so. It's my dark shame and secret. I was too much for the Revered

Fathers, though. They expelled me, for reasons sufficient to promote me to a secular education under the Foundation. Well, look, I'd better push off. How's your quota this year?"

Gorm crushed out his cigarette and adjusted his cap. "I've got my large cargo going now. I'll make it."

"Lucky fellow," gloomed Devers, and for many minutes after Les Gorm left, he sat in motionless reverie.

So Eskel Gorov was on Askone—and in prison as well!

That was bad! In fact, considerably worse than it might appear. It was one thing to tell a curious youngster a diluted version of the business to throw him off and send him about his own. It was a thing of a different sort to face the truth.

For Lathan Devers was one of the few people who happened to know that Master Trader Eskel Gorov was not a trader at all; but that entirely different thing, an agent of the Foundation!

Two weeks gone! Two weeks wasted.

One week to reach Askone, at the extreme borders of which the vigilant warships speared out to meet him in converging numbers. Whatever their detection system was, it worked—and well.

They sidled him in slowly, without a signal, maintaining their cold distance, and pointing him harshly towards the central sun of Askone.

Devers could have handled them at a pinch. Those ships were holdovers from the dead-and-gone Galactic Empire—but they were sports cruisers, not warships; and without atomic weapons, they were so many picturesque and impotent ellipsoids. But Askel Gorov was a prisoner in their hands, and Gorov was not a hostage to lose. The Askonians must know that.

And then another week—a week to wind a weary way through the clouds of minor officials that formed the buffer between the Grand Master and the outer world. Each little sub-secretary required soothing and conciliation. Each required careful and nauseating milking for the flourishing signature that was the pathway to the next official one higher up.

For the first time, Devers found his trader's identification papers useless.

Now the Grand Master was on the other side of the guard-flanked, gilded door—and two weeks had gone.

Gorov was still a prisoner and Devers' cargo rotted useless in the holds of his ship.

The Grand Master was a small man; a small man with a balding head and very wrinkled face, whose body seemed weighed down to motionlessness by the huge, glossy fur collar about his neck.

His fingers moved on either side, and the line of armed men backed away to form a passage, along which Devers strode to the foot of the Chair of State.

"Don't speak," snapped the Grand Master, and Devers' opening lips closed tightly.

"That's right," the Askonian ruler relaxed visibly. "I can't endure useless chatter. You cannot threaten and I won't abide flattery. Nor is their room for injured complaints. I have lost count of the times you wanderers have been warned that your devil's machines are not wanted anywhere in Askone."

"Sir," said Devers, quietly, "there is no attempt to justify the trader in question. It is not the policy of traders to intrude where they are not wanted. But the Galaxy is great, and it has happened before that a boundary has been trespassed unwittingly. It was a deplorable mistake."

"Deplorable, certainly," squeaked the Grand Master. "But mistake? Your people on Glyptal IV have been bombarding me with pleas for negotiation since two hours after the sacrilegious wretch was seized. I have been warned by them of your own coming many times over. It seems a well-organized rescue campaign. Much seems to have been anticipated—a little too much for mistakes, deplorable or otherwise."

The Askonian's black eyes were scornful. He raced on, "And are you traders, flitting from world to world like mad little butterflies, so mad in your own right that you can land on Askone's largest world, in the center of its system, and consider it an unwitting boundary mixup. Come, surely not."

Devers winced without showing it. He said doggedly, "If the attempt to trade was deliberate, your veneration, it was most injudicious and contrary to the strictest regulations of our Guild."

"Injudicious, yes," said the Askonian, curtly. "So much so, that your comrade is likely to lose life in payment."

Devers' stomach knotted. There was no irresolution there. He said, "Death, your veneration, is so absolute and irrevocable a phenomenon that certainly there must be some alternative."

There was a pause before the guarded

answer came, "I have heard that the Foundation is rich."

"Rich? Certainly. But our riches are that which you refuse to take. Our atomic goods are worth—"

"Your goods are worthless in that they lack the ancestral blessing. Your goods are wicked and accursed in that they lie under the ancestral interdict." The sentences were intoned; the recitation of a formula.

The Grand Master's eyelids dropped, and he said with meaning, "You have nothing else of value?"

The meaning was lost in the trader, "I don't understand. What is it you want?"

The Askonian's hands spread apart, "You ask me to trade places with you, and make known to you *my* wants. I think not. Your colleague, it seems, must suffer the punishment set for sacrilege by the Askonian code. Death by gas. We are a just people. The poorest peasant, in like case, would suffer no more. I, myself, would suffer no less."

Devers mumbled hopelessly, "Your veneration, would it be permitted that I speak to the prisoner?"

"Askonian law," said the Grand Master coldly, "allows no communication with a condemned man."

Mentally, Devers held his breath, "Your veneration, I ask you to be merciful towards a man's soul, in the hour when his body stands forfeit. He has been separated from spiritual consolation in all the time that his life was in danger. Even now, he faces the prospect of going unprepared to the bosom of the Spirit that rules all."

The Grand Master said slowly and suspiciously, "You are a Tender of the Soul?"

Devers dropped a humble head, "I have been so trained. In the empty expanses of space, the wandering traders need men like myself to care for the spiritual side of a life so given over to commerce and worldly pursuits."

The Askonian ruler sucked thoughtfully at his lower lip. "Every man should prepare his soul for his journey to his ancestral spirits. Yet I had never thought you traders to be believers."

Eskel Gorov stirred on his couch and opened one eye as Lathan Devers entered the heavily-reinforced door. It boomed shut behind him. Gorov sputtered and came to his feet.

"Devers! They sent you?"

"Pure chance," said Devers, bitterly, "or the work of my own personal malevolent demon. Item one, you get into a mess on Askone. Item two, my sales route, as known to the Board of Trade, carries me within fifty parsecs of the system at just the time of item one. Item three, we've worked together before and the Board knows it. Isn't that a sweet, inevitable set-up? The answer just pops out of a slot."

"Be careful," said Gorov, tautly. "There'll be someone listening. Are you wearing a Field Distorter?"

Devers indicated the ornamented bracelet that hugged his wrist and Gorov relaxed.

Devers looked about him. The cell was bare, but large. It was well-lit and it lacked offensive odors. He said, "Not bad. They're treating you with kid gloves."

Gorov brushed the remark aside, "Listen, how did you get down here? I've been in strict solitary for almost two weeks."

"Ever since I came, huh? Well, it seems the old bird who's boss here has his weak points. He leans toward pious speeches, so I took a chance that worked. I'm here in the capacity of your spiritual adviser. There's something about a pious man, who will cheerfully cut your throat when it suits him, you know, that creates an ingrained reluctance to endanger the welfare of your soul. It's just a piece of empirical psychology. A trader has to know a little of everything."

Gorov's smile was sardonic. "And you've been to theological school as well. You're all right, Devers. I'm glad they sent you. But the Grand Master doesn't love my soul exclusively. Has he mentioned a ransom?"

The trader's eyes narrowed, "He hinted —barely. And he also threatened death by gas. I played safe, and dodged; it might easily have been a trap. So it's extortion, is it? What is it he wants?"

"Gold."

"Gold!" Devers frowned. "The metal itself? What for?"

"It's their medium of exchange."

"Is it? And where do I get gold from?"

"Wherever you can. Listen to me; this is important. Nothing will happen to me as long as the Grand Master has the scent of gold in his nose. Promise it to him; as much as he asks for. Then go back to the Foundation, if necessary, to get it. When I'm free, we'll be escorted out of the system, and then we part company."

Devers stared disapprovingly, "And then you'll come back and try again."

"It's my assignment to sell atomics to Askone."

"They'll get you before you've gone a parsec in space. You know that, I suppose."

"I don't," said Gorov. "And if I did, it wouldn't affect things."

"They'll kill you the second time."

Gorov shrugged.

Devers said quietly, "If I'm going to negotiate with the Grand Master again, I want to know the whole story. So far, I've been working it too blind. As it was, the few mild remarks I did make almost threw his veneration into fits."

"It's simple enough." Gorov spoke rapidly, and in a whisper. "Here it is. The Foundation is creating a commercial empire here in the Periphery. The foreign policy revolves about that. We are the only source of atomic power available except for such relics of the old Empire as still exist. Every system then, whose economic backbone we can convert from chemical and mechanical energy to atomic energy becomes totally dependent upon us."

Devers was nodding. "That I realize. I'm a trader."

"Right. And that's your reason for existence. Organized trade for the Foundation at present can exist only with worlds relatively near. You traders are the outposts, the wandering peddlers, that reach regions we couldn't otherwise for centuries, perhaps. You're wedges, understand. You introduce gadgets, little atomic doodads, that open the way, increase the desire, whet the appetite."

The trader grinned, "Stop. You're breaking my heart."

"It's so!" Gorov was not grinning. "And, conversely, going back to the argument, any system that refuses to accept atomic gadgets is dangerous to us—"

"Because such a system can never be under our economic domination?"

"*And* because it can act as a focal point for hostility."

"All right, then," said Devers, "so much for theory. Now what exactly prevents the sale. Religion? The Grand Master implied as much."

"It's a form of ancestor worship. Their traditions tell of an evil past from which they were saved by the simple and virtuous heroes of the past generations. It amounts to a distortion of the anarchic period two centuries ago, when the imperial troops were driven out and an independent government was set up. Advanced science and atomic power in particular became identified with the old imperial regime they remember with horror."

"That so? But they have nice little ships which spotted me very handily two parsecs away. That smells of atomics to me."

Gorov shrugged, "Those ships are holdovers of the Empire, no doubt. Probably with atomic drive. What they have, they keep. The point is that they will not innovate, and their internal economy is entirely nonatomic. That is what we must change."

"How were you going to do it?"

"By breaking the resistance at one point. To put it simply, if I could sell a penknife with a forcefield blade to a nobleman, it would be to his interest to use it. Put that baldly, it sounds silly, but it is sound, psychologically. To make strategic sales at strategic points would be to create a pro-Atomics faction at court."

"A wedge to start the wedge towards economic domination. Wedges within wedges, huh? And they send you? And I'm to ransom you and leave, while you keep on trying? Isn't that sort of tailing backwards?"

"In that way?" said Gorov, guardedly.

"Listen," Devers was suddenly exasperated, "you're a diplomat, not a trader, and calling you one won't make you one. This is a case for someone who's made a business of selling—and I'm here with a full cargo stinking into uselessness, and a quota that won't ever be met, it looks like."

"You mean you're going to risk your life on something that isn't your business?" Gorov smiled thinly.

Devers said, "You mean that this is a matter of patriotism, and traders aren't patriotic?"

"Notoriously not. Pioneers never are."

"All right. I'll grant that. I don't scoot about space to save the Foundation or anything like that. But I'm out to make money, and this is my chance. If it helps the Foundation at the same time, all the better. And I've risked my life on slimmer chances."

Devers rose, and Gorov rose with him, "What are you going to do, Devers?"

The trader smiled, "Gorov, I don't know —yet. But if the crux of the matter is to make a sale, I'm your man. I'm not a boaster as a general thing, but there's one thing I'll always back up. I've never *ended up* below quota yet."

The door to the cell opened almost instantly when he knocked, and two guards fell in on either side.

"A show!" said the Grand Master, grimly. He settled himself well into his furs, and one thin hand grasped the iron cudgel he used as a cane.

"And gold, your veneration."

"*And* gold," agreed the Grand Master, carelessly.

Devers set the box down and opened it with as fine an appearance of confidence as he could manage. He felt alone in the face of universal hostility; the way he had felt out in space his first year. The semicircle of bearded councilors who faced him down, stared unpleasantly. Among them was Pherl, the thin-faced favorite who sat next to the Grand Master in stiff hostility. Devers had met him once already and marked him immediately as prime enemy, and, as a consequence prime victim.

Outside the hall, a small army awaited events. Devers was effectively isolated from his ship; he lacked any weapon, but his attempted bribe; and Gorov was still a hostage.

He made the final adjustments on the clumsy monstrosity that had cost him a week of ingenuity, and prayed once again that the lead-lined quartz would stand the strain.

"What is it?" asked the Grand Master.

"This," said Devers, stepping back, "is a small device I have constructed myself."

"That is obvious, but not the information I want. Is it one of the black-magic abominations of your world?"

"It is atomic in nature," admitted Devers, gravely, "but none of you need touch it, or have anything to do with it. It is for myself alone, and if it contains abominations, I take the foulness of it upon myself."

The Grand Master had raised his iron cane at the machine in a threatening gesture and his lips moved rapidly and silently in a purifying invocation. The thin-faced councillor at his right leaned towards him and his straggled red mustache approached the Grand Master's ear. The ancient Askonian petulantly shrugged himself free.

"And what is the connection of your instrument of evil and the gold that may save your countryman's life?"

"With this machine," began Devers, as his hand dropped softly onto the central chamber and caressed its hard, round flanks, "I can turn the iron you discard into gold of the finest quality. It is the only device known to man that will take iron—the ugly iron, your veneration, that props up the chair you sit in and the walls of this building—and change it to shining, heavy, yellow gold."

Devers felt himself botching it. His usual sales talk was smooth, facile and plausible; but this limped like a shot-up space wagon. But it was the content, not the form, that interested the Grand Master.

"So? Transmutaion? There have been fools who have claimed the ability. They have paid for their prying sacrilege."

"Had they succeeded?"

"No." The Grand Master seemed coldly amused. "Success at producing gold would have been a crime that carried its own antidote. It is the attempt plus the failure that is fatal. Here, what can you do with my staff." He pounded the floor with it.

"Your veneration will excuse me. My device is a small model, prepared by myself, and your staff is too long."

The Grand Master's small shining eye wandered and stopped, "Randel, your buckles. Come, man, they shall be replaced doubly if need be."

The buckles passed down the line, hand to hand. The Grand Master weighed them thoughtfully. "Here," he said, and threw them to the floor.

Devers picked them up. He tugged hard before the cylinder opened, and his eyes blinked and squinted with effort as he centered the buckles carefully on the anode screen. Later, it would be easier but there must be no failures the first time.

The homemade transmuter crackled malevolently for ten minutes while the odor of ozone became faintly present. The Askonians backed away, muttering, and again Pherl whispered urgently into his ruler's ear. The Grand Master's expression was stony. He did not budge.

And the buckles were gold.

Devers held them out to the Grand Master with a murmured, "Your veneration!" but the old man hesitated, then gestured them away. His stare lingered upon the transmuter.

Devers said rapidly, "Gentlemen, this is gold. Gold through and through. You may subject it to every known physical and chemical test, if you wish to prove the point. It cannot be identified from naturally-occurring gold in any way. Any iron can be so treated. Rust will not interfere, nor will a moderate amount of alloying metals—"

But Devers spoke only to fill a vacuum. He let the buckles remain in his outstretched hand, and it was the gold that argued for him.

The Grand Master stretched out a slow hand at last, and the thin-faced Pherl was

roused to open speech. "Your veneration, the gold is from a poisoned source."

And Devers countered, "A rose can grow from the mud, your veneration. In your dealings with your neighbors, you buy material of all imaginable variety, without inquiring as to where they get it, whether from an orthodox machine blessed by your benign ancestors or from some space-spawned outrage. Come, I don't offer the machine. I offer the gold."

"Your veneration," said Pherl, "you are not responsible for the sins of foreigners who work neither with your consent nor knowledge. But to accept this strange pseudo-gold made sinfully from iron in your presence and with your consent is an affront to the living spirits of our holy ancestors."

"Yet gold is gold," said the Grand Master, doubtfully, "and is but an exchange for the heathen person of a convicted felon. Pherl, you are too critical." But he withdrew his hand.

Devers said, "You are wisdom itself, your veneration. Consider, to give up a heathen is to lose nothing for your ancestors, whereas with the gold you get in exchange, you can ornament the shrines of their holy spirits. And surely, were gold evil in itself, if such a thing could be, the evil would depart of necessity once the metal were put to such pious use."

"Now by the bones of my grandfather," said the Grand Master with surprising vehemence. His lips separated in a shrill laugh, "Pherl, what do you say of this young man? The statement is valid. It is as valid as the words of my ancestors."

Pherl said gloomily, "So it would seem. Grant that the validity does not turn out to be a device of the Malignant Spirit."

"I'll make it even better," said Devers, suddenly. "Hold the gold in hostage. Place it on the altars of your ancestors as an offering and hold me for thirty days. If at the end of that time, there is no evidence of displeasure—if no disasters occur—surely, it would be a proof that the offering were accepted. What more can be offered?"

And when the Grand Master rose to his feet to search out disapproval, not a man in the council failed to signal his agreement. Even Pherl chewed the ragged end of his mustache and nodded curtly.

Devers smiled and meditated on the uses of a religious education.

Another week rubbed away before the meeting with Pherl was arranged. Devers felt the tension, but he was used to the feeling of physical helplessness now. He had left city limits under guard. He was in Pherl's suburban villa under guard. There was nothing to do but accept it without even looking over his shoulder.

Pherl was taller and younger outside the circle of Elders. In non-formal costume, he seemed no Elder at all.

He said abruptly, "You're a peculiar man." His close-set eyes seemed to quiver, "You've done nothing this last week, and particularly these last two hours, but imply that I need gold. It seems useless labor, for who does not? Why not advance one step?"

"It is not simply gold," said Devers, discreetly. "Not *simply* gold. Not merely a coin or two. It is rather all that lies behind gold."

"Now what can lie behind gold?" prodded Pherl, with a down-curved smile. "Certainly this is not the preliminary of another clumsy demonstration."

"Clumsy?" Devers frowned slightly.

"Oh, definitely." Pherl folded his hands and nudged them gently with his chin. "I don't criticize you. The clumsiness was on purpose, I am sure. I might have warned his veneration of *that,* had I been certain of the motive. Now had I been you, I would have produced the gold upon my ship, and offered it alone. The show you offered us and the antagonism you aroused would have been dispensed with."

"True," Denver admitted, "but since I was myself, I accepted the antagonism for the sake of attracting your attention."

"Is that it? Simply that?" Pherl made no effort to hide his contemptuous amusement. "And I imagine you suggested the thirty-day purification period that you might assure yourself time to turn the attraction into something a bit more substantial. But what if the gold turns out to be impure."

Devers allowed himself a dark humor in return, "When the judgment of that impurity depends upon those who are most interested in finding it pure?"

Pherl lifted his eyes and stared narrowly at the trader. He seemed at once surprised and satisfied.

"A sensible point. Now tell me why you wished to attract me."

"It is what I wish to do. In the short time I have been here, I have observed facts that concern you and interest me. For

instance, you are young—very young for a member of the council, and even of a relatively young family."

"You criticize my family?"

"Not at all. Your ancestors are great and holy; all will admit that. But there are those that say you are not a member of one of the Five Tribes."

Pherl leaned back, "With all respect to those involved," and he did not hide his venom, "the Five Tribes have impoverished loins and thin blood. Not fifty members of the Tribes are alive."

"Yet there are those who say the nation would not be willing to see any man outside the Tribes as Grand Master. And so young and newly-advanced a favorite of the Grand Master is bound to make powerful enemies among the great ones of the State —it is said. His veneration is aging and his protection will not last past his death, when it is an enemy of yours who will undoubtedly be the one to interpret the words of his Spirit."

Pherl scowled, "For a foreigner you hear much. Such ears were made for cropping."

"That may be decided later."

"Let me anticipate." Pherl stirred impatiently in his seat. "You're going to offer me wealth and power in terms of those evil little machines you carry in your ship. Well?"

"Suppose it so. What would be your objection? Simply your standard of good and evil?"

Pherl shook his head. "Not at all. Look, my Outlander, your opinion of us in your heathen agnosticism, is what it is—but I am not the entire slave of our mythology I may appear. I am an educated man, sir, and, I hope, an enlightened one. The full depth of our religious customs, in the ritualistic rather than the ethical sense, is for the masses."

"Your objection, then?" pressed Devers, gently.

"Just that. The masses. *I* might be willing to deal with you, but your little machines must be used to be useful. How might riches come to me, if I had to use . . . what is it you sell? . . . well, a razor, for instance, only in the strictest, trembling secrecy. Even if my chin were more simply and more cleanly shaven, how would I become rich? And how would I avoid death by gas chamber or mob frightfulness if I were ever once caught using it."

Devers shrugged, "You are correct. I might point out that the remedy would be to educate your own people into the use of atomics for their convenience, and your substantial profit. It would be a gigantic piece of work; I don't deny it; but the returns would be more gigantic. But that is your concern, and, at the moment, not mine at all. For I offer neither razor, knife, nor mechanical garbage disposer."

"What do you offer?"

"Gold itself. Directly. You may have the machine I demonstrated last week."

And now Pherl stiffened and the skin on his forehead moved jerkily. "The transmuter?"

"Exactly. Your supply of gold will equal your supply of iron. That, I imagine, is sufficient for all needs. Sufficient for the Grand Mastership itself, despite youth and enemies. And it is safe."

"In what way?"

"In that secrecy is the essence of its use. That same secrecy you described as the only safety with regard to atomics. You may bury the transmuter in the deepest dungeon of the strongest fortress on your furthest estate, and it will still bring you instant wealth. It is the *gold* you buy, not the machine, and that gold bears no trace of its manufacture, for it cannot be told from the natural creation."

"And who is to operate the machine?"

"Yourself. Five minutes teaching is all you will require. I'll set it up for you wherever you wish."

"And in return?"

"Well," Devers grew cautious. "I ask a price, and a handsome one. It is my living. Let us say, for it is a valuable machine, the equivalent of a cubic foot of gold in iron ore."

Pherl laughed, and Devers grew red. "I point out, sir," he added, stiffly, "that you can get your price back in two hours."

"True, and in one hour, you might be gone, and my machine might suddenly turn out to be useless. I'll need a guarantee."

"You have my word."

"A very good one," Pherl bowed sardonically, "but your presence would be an even better assurance. I'll give you *my* word to pay you one week after delivery in working order."

"Impossible."

"Impossible? When you've already incurred the death penalty very handily by even offering to sell me anything. The only alternative is my word that you'll get the gas chamber tomorrow otherwise."

Devers' face was expressionless, but his

eyes might have flickered. He said, "It is an unfair advantage. You will at least put your promise in writing?"

"And also become liable for execution? No, sir!" Pherl smiled a broad satisfaction. "No, sir! Only one of us is a fool."

The trader said in a small voice, "It is agreed, then."

Gorov was released on the thirtieth day, and five hundred pounds of the yellowest gold took his place. And with him was released the quarantined and untouched abomination that was his ship.

Then, as on the journey into the Askonian system, so on the journey out, the cylinder of sleek little ships ushered them on their way.

Devers watched the dimly sun-lit speck that was Gorov's ship while Gorov's voice pierced through to him, clear and thin on the tight, distortion-bounded, ether-beam.

He was saying, "But it isn't what's wanted, Devers. A transmuter won't do. Where did you get one, anyway?"

"I didn't," Devers' answer was patient. "I juiced it up out of a food irradiation chamber. It isn't any good, really. The power consumption is prohibitive on any large scale or the Foundation would use transmutation instead of chasing all over the Galaxy for heavy metals. It's one of the standard tricks every trader uses, except that I never saw an iron-to-gold one before. But it's impressive, and it works—very temporarily."

"All right. But that particular trick is no good."

"It got you out of a nasty spot."

"That is very far from the point. Especially since I've got to go back, once we shake our solicitous comrades."

"Why?"

"You yourself explained it to this politician of yours." Gorov's voice was on edge, "Your entire sales-point rested on the fact that the transmuter was a means to an end, of no value in itself; that he was buying the gold, not the machine. It was good psychology, since it worked, but—"

"But?" Devers urged blandly and obtusely.

The voice from the receiver grew shriller, "But we want to sell them a machine of value in itself; something they would want to use openly; something that would tend to force them out in favor of atomic techniques as a matter of self-interest."

"I understand all that," said Devers, gently. "You once explained it. But look at what follows from my sale, will you? As long as that transmuter lasts, Pherl will coin gold; and it will last long enough to buy him the next election. The present Grand Master won't last long."

"You count on gratitude?" asked Gorov, coldly.

"No—on intelligent self-interest. The transmuter gets him an election; other mechanisms—"

"No! No! Your promise is twisted. It's not the transmuter, he'll credit—it'll be the good, old-fashioned gold. That's what I'm trying to tell you."

Devers grinned and shifted into a more comfortable position. All right. He'd baited the poor fellow sufficiently. Gorov was beginning to sound wild.

The trader said, "Not so fast, Gorov. I haven't finished. There are other gadgets already involved."

There was a short silence. Then, Gorov's voice sounded cautiously, "What other gadgets?"

Devers gestured automatically and uselessly, "You see that escort?"

"I do," said Gorov shortly. "Tell me about those gadgets."

"I am . . . if you'll listen. That's Pherl's private navy escorting us. A special honor to him from the Grand Master that he managed to squeeze out."

"So?"

"And where do you think he's taking us? To his mining estates on the outskirts of Askone, that's where. Listen!" Dever was suddenly fiery, "I told you I was in this to make money, not to save worlds. All right. I sold that transmuter for nothing. Nothing except the risk of the gas chamber and that doesn't count towards the quota."

"Get back to the mining estates, Devers. Where do they come in?"

"With the profits. We're stacking up on tin, Gorov. Tin to fill every last cubic foot this old scow can scrape up, and then some more for yours. I'm going down with Pherl to collect, old man, and you're going to cover me from upstairs with every gun you've got—just in case Pherl isn't as sporting about the matter as he lets on to be. That tin's my profit."

"For the transmuter?"

"*For my entire cargo of atomics.* At double price, plus a bonus." He shrugged, almost apologetically. "I admit I gouged him, but I've got to make quota, don't I?"

Gorov was evidently lost. He said, weakly, "Do you mind explaining?"

"What's there to explain? It's obvious, Gorov. Look, the clever dog thought he had me in a foolproof trap, because his word was worth more than mine to the Grand Master. He took the transmuter. That was a capital crime in Askone. But at any time he could say that he had lured me on into a trap with the purest of patriotic motives, and denounce me as a seller of forbidden things."

"*That* was obvious."

"Sure, but word against simple word wasn't all there was to it. You see, he'd never heard nor conceived of a micro film-recorder."

Gorov laughed suddenly.

"That's right," said Devers. "He had the upper hand. I was properly chastened. But when I set up the transmuter for him in my whipped-dog fashion, I incorporated the recorder into the device and removed it in the next day's overhaul. I had a perfect record of his sanctum sanctorum, his holy-of-holies, with he himself, poor Pherl, operating the transmuter for all the ergs it had, and crowing over his first piece of gold as if it were an egg he had just laid."

"You showed him the results?"

"Two days later. The poor sap had never seen three-dimensional color-sound images in his life. He claims he isn't superstitious, but if I ever saw an adult look as scared as he did then, call me rookie. When I told him I had a recorder planted in the city square, set to go off at midnight with a million fanatical Askonians to watch, and to tear him to pieces subsequently, he was gibbering at my knees in half a second. Ready to make any deal I wanted."

"Did you?" Gorov's voice was suppressing laughter. "I mean, have one planted in the city square."

"No, that sounded good, but I really had one in the palace courtyard which didn't sound as impressive but was much more dangerous really. He made the deal. He bought every gadget I've got—and yours, too—for as much tin as we could carry. The agreement is in writing, and you'll have a copy before I go down with him."

Gorov sobered up. "But you've damaged his ego. Will he use the gadgets?"

"Why not? It's his only way of recouping his losses, and if he makes money out of it, he'll salve his pride. And he *will* be the next Grand Master—and the best man we could have in our favor."

"Yes," said Gorov, explosively, "it was a good sale, but you've certainly got an uncomfortable sales-technique. No wonder you got kicked out of a seminary. You've got no sense of morals."

"What's the odds?" said Devers, indifferently. "You know what Salvor Hardin said about a sense of morals."

KINDNESS

By LESTER DEL REY

Part of any true higher civilization must be an innate respect for the feelings and personalities of others. To be genuinely superior, supermen must have that understanding—

THE wind eddied idly around the corner and past the secluded park bench. It caught fitfully at the paper on the ground, turning the pages, then picked up a section and blew away with it, leaving gaudy-colored comics uppermost. Danny moved further into the sunlight, his eyes dropping to the children's page exposed.

But it was no use; he made no effort to pick up the paper. In a world where even children's comics needed explaining, there could be nothing of interest to the last living homo sapiens. His foot kicked the paper away, under the bench where it would no longer remind him of his deficiencies. There had been a time when he had tried to reason slowly over the omitted steps of logic and find the point to such things, sometimes successfully, more often not; but now he left it to the quick, intuitive think-

ing of those about him. Nothing fell flatter than a joke that had to be reasoned out slowly.

Homo sapiens! In the dim, remote days when his ancestors had owned the world, they had made jokes about it, shortening it to "homo sap," and laughing, because they'd known no other species to rival them. It was no longer a joke. Homo intelligens was now the master, and he was only a living fossil, painfully aware that the old pun had become reality. Danny was the last man in a world of supermen, cursing the selfishness of the mother who had borne him to ease her own loneliness and then died to leave that loneliness as his heritage!

He drew farther back on the bench as the steps of a young couple reached his ears, pulling his hat down to avoid recognition. But they went by, preoccupied with their own affairs, leaving only a scattered bit of conversation in his ears. He turned it over, trying senselessly to decode it.

Impossible! Even in the casual talk, there were too many steps of logic left out. Reasoning no longer sufficed, among these supermen and women who could short-circuit the cumbersome steps of logic by intuition and arrive instantly at a full picture of the whole from some minor bit added to the facts already stored in their completely organized heads. Homo sapiens had invented reason to replace the uncertain trial-and-error thinking of the other animals, and had ruled supreme for a million years. Now homo intelligens had replaced that with full intuition that leaped from fact to conclusion without going through the painful intermediate steps of reasoning, and the new supremacy was his.

Somehow, soon, those escape plans must be completed, before the last of his little courage was gone! Danny stirred restlessly, and the work tokens in his pocket set up a faint jingling sound. More charity, or occupational therapy! For six hours a day, five days a week, he worked in a little office, painfully doing routine work that could probably have been done better by machinery. Oh, they assured him that his manual skill was as great as theirs and was needed, but he could never be sure. In their unfailing kindness, they had probably decided it was better for him to live as normal a life as they could devise, and then had created the job to fit the decision.

Other footsteps came down the little path, but he did not look up until they stopped.

"Hi, Danny! You weren't at the Library, and Miss Larsen said, pay day, weather, and all, I'd find you here. How's everything?"

Outwardly, Jack Thorpe's body might have been the twin of his own well-muscled one, and the smiling face above it bore no distinguishing characteristics. The mutation had been within, a quicker, more complex relation of brain cell to brain cell that had no accompanying physical changes. Danny nodded at Jack, drawing over reluctantly to make way for this man who had been his playmate when they were both too young for the difference to matter so much.

He did not ask the reasons behind the librarian's knowledge of his whereabouts; so far as he knew, there was no particular pattern to his coming here, but to the others there must be one. He forced a smile onto his own face.

"Hi, Jack. Fine! I thought you were on Mars."

Thorpe frowned, as if an effort were needed to remember that the mind beside him was different, and his words bore the careful phrasing of all those who spoke to Danny. "I finished that, for the time being; I'm supposed to report to Venus next. They're having trouble getting an even balance of sex in their offspring there, you know. Thought you might want to come along. You've never been Outside, and you were always bugs about those old space stories, I remember."

"I still am, Jack. But—" He knew what it meant, of course. Those who looked after him behind the scenes had detected the growing discontent, and were hoping to distract him with this chance to see the places his fathers had conquered in the heyday of his race. But he had no wish to see them as they now were, filled with the busy work of the new men; it was better to imagine them as they had once been, rather than see reality. And the ship was here; there could be no chance for escape from those other worlds.

Jack nodded quickly, with the almost telepathic understanding of his race. "Of course. Suit yourself, fellow. Going up the Heights? Miss Larsen says she has something for you."

"Not yet, Jack. I thought I might look at . . . drop by the old Museum."

"Oh." Thorpe got up slowly, brushing his suit with idle fingers. "Danny!"

"Uh?"

"I probably know you better than any-

one else, fellow, so—" He hesitated, shrugged, and went on. "Don't mind if I jump to conclusions; I won't talk out of turn. But best of luck—and good-by, Danny!"

He was gone, almost instantly, leaving Danny's heart stuck in his throat. A few words, a facial expression, probably some childhood memories, and he might as well have revealed his most cherished secret hopes in shouted words! How many others knew of his interest in the old ship in the Museum and his careful plot to escape this kindly, charity-filled Gehenna?

He crushed a cigarette under his heel, trying to forget the thought. Jack had played with him as a child, and the others hadn't. He'd have to base his hopes on that and be even more careful never to think of the idea around others. In the meantime, he'd stay away from the ship! Perhaps in that way the subtle warning of Thorpe's words might work in his favor—provided the man had meant his promise of silence.

Danny forced his doubts away, grimly conscious that he dared not lose hope in this last desperate scheme for independence and self-repect; the other way lay despair and listless hopelessness, the same empty death from an acute inferiority complex that had claimed the diminishing numbers of his own kind and left him as the last, lonely specimen. Somehow, he'd succeed. And in the meantime, he would go to the Library and leave the Museum severely alone.

There was a throng of people leaving the Library as Danny came up the escalator, but either they did not recognize him with his hat pulled low or sensed his desire and pretended not to. He slipped into one of the less used hallways and made his way toward the Historic Documents section, where Miss Larsen was putting away the reading tapes and preparing to leave.

But she tossed them aside quickly as he came in and smiled up at him, the rich, warm smile of her people. "Hello, Danny! Did your friend find you all right?"

"Mm-m-m. He said you had something for me."

" I have." There was pleasure in her face as she turned back toward the desk behind her, to come up with a small wrapped parcel. For the thousandth time, he caught himself wishing she were of his race and quenching the feeling as he realized what her attitude must really be. To her, the small talk from his race's past was a subject of historic interest, no more. "Guess what?"

But in spite of himself, his face lighted, both at the game and the package. "The magazines! The lost issues of *Space Trails?* There had been only the first installment of a story extant, and yet that single part had set his pulses throbbing as few of the other ancient stories of his ancestors' conquest of space had done. Now, with the missing sections, life would be filled with zest for a few more hours as he followed the fictional exploits of a conqueror who had known no fear of keener minds.

"Not quite, Danny, but almost. We couldn't locate even a trace of them, but I gave the first installment to Bryant Kenning last week, and he finished it for you." Her voice was apologetic. "Of course the words won't be quite identical, but Kenning swears that the story is undoubtedly exactly the same in structure as it would have been, and the style is duplicated almost perfectly!"

Like that! Kenning had taken the first pages of a novel that had meant weeks and months of thought to some ancient writer and had found in them the whole plot, clearly revealed, instantly his! A night's labor had been needed to duplicate it, probably, a disagreeable and boring piece of work, but not a difficult one! Danny did not question the accuracy of the duplication, since Kenning was their greatest historical novelist. But the pleasure went out of it.

He took the package, noting that some illustrator had even copied the old artist's style, and that it was set up to match the original format. "Thank you, Miss Larsen. I'm sorry to put all of you to so much trouble. And it was nice of Mr. Kenning!"

Her face had fallen with his, but she pretended not to notice. "He wanted to do it—volunteered when he heard we were searching for the missing copies. And if there are any others with pieces missing, Danny, he wants you to let him know. You two are about the only ones who use this division now; why don't you drop by and see him? If you'd like to go tonight—"

"Thanks. But I'll read this tonight, instead. Tell him I'm very grateful, though, will you? But he paused, wondering again whether he dared ask for tapes on the history of the asteroids; no, there would be too much risk of her guessing, either now or later. He dared not trust any of them with a hint of his plan.

Miss Larsen smiled again, half winking at him. "O.K., Danny, I'll tell him. 'Night!"

Outside, with the cool of evening beginning to fall, Danny found his way into the untraveled sections and let his feet guide him. Once, as a group came toward him. he crossed the street without thinking, and went on. The package under his arm grew heavy, and he shifted it, torn between a desire to find what had happened to the hero and a disgust at his own sapient mind for not knowing. Probably, in the long run, he'd end up by going home and reading it, but for the moment he was nearest content to let his feet carry him along idly, holding most of his thoughts in abeyance.

Another small park was in his path, and he crossed it slowly, the babble of small children's voices only partly heard until he came to them, two boys and a girl. The supervisor, who should have had them back at the Center, was a dim shape in the far shadows, with another, dimmer shape beside her, leaving the three five-year-olds happily engaged in the ancient pastime of getting dirty and impressing each other.

Danny stopped, a slow smile creeping onto his lips. At that age, their intuitive faculty was just beginning, and their little games and pretenses made sense that was like a tonic to him. Vaguely, he remembered his own friends of that age beginning uncertainly to acquire the trick of seeming omniscience, and his worries at being left behind. For a time, the occasional flashes of intuition that had always blessed even homo sapiens gave him hope, but eventually the supervisor had been forced to tell him that he was different, and why. Now he thrust those painful memories aside and slipped quietly forward into the game.

They accepted him with the easy nonchalance of children who have no repressions, feverishly trying to build their sand-castles higher than his; but in that, his experience was greater than theirs, and his judgment of the damp medium surer. A perverse glow of accomplishment grew inside him as he added still another story to the towering structure and built a bridge, propped up with sticks and leaves, leading to it.

Then the lights came on, illuminating the sandbox and those inside and dispelling the shadows of dusk. The little boy glanced up, really seeing him for the first time. "Oh, you're Danny Black, ain't you? I seen your pi'ture. Judy, Maysie, look! It's that man—"

But their voices faded out as he ran off through the park and into the deserted byways again, clutching the package to him. Fool! To delight in beating children at a useless game, of to be surprised that they should know him! He slowed to a walk, twitching his lips at the thought that by now the supervisor would be reprimanding them for their thoughtlessness. And still his feet went on, unguided.

It was inevitable, of course, that they should lead him to the Museum, where all his secret hopes centered, but he was surprised to look up and see it before him. And then he was glad. Surely they could read nothing in this visit, unpremeditated, just before the place closed. He caught his breath, forced his face into lines of mere casual interest, and went inside, down the long corridors, and to the hall of the ship.

She rested there, pointed slightly skyward, sleek and immense even in a room designed to appear like the distant reaches of space. For six hundred feet, gleaming metal formed a smooth frictionless surface that slid gracefully from the blunt bow back toward the narrow stern with its blackened ion jets.

This, Danny knew, was the last and greatest of the space liners his people had built at the height of their glory. And even before her, the mutation had been caused by the radiation of deep space, the results were spreading. For a time, as the log books indicated, she had sailed out to Mars, to Venus, and to the other points of man's empire, while the tension slowly mounted at home. There had never been another wholly sapient-designed ship, for the new race was making its greater power felt, with the invert-matter rocket replacing the older, less efficient, ion rocket the ship still carried. Eventually, unable to compete with the new models, she had been retired from the service and junked, while the War passed by her and buried her under tons of rubble, leaving no memory of her existence.

And now, carefully excavated from the old ruins of the drydock where she had lain so long, she had been enthroned in state for the last year, here in the Museum of Sapient History, while all Danny's hopes and prayers had centered around her. There was still a feeling of awe in him as he started slowly across the carpeted floor toward the open lock and the lighted interior.

"Danny!" The sudden word interrupted him, bringing him about with a guilty start, but it was only Professor Kirk, and he relaxed again. The old archæologist came toward him, his smile barely visible in the

half-light of the immense dome. "I'd about given you up, boy, and started out. But I happened to look back and see you. Thought you might be interested in some information I just came onto today."

"Information about the ship?"

"What else? Here, come on inside her and into the lounge—I have a few privileges here, and we might as well be comfortable. You know, as I grow older, I find myself appreciating your ancestors' ideas of comfort, Danny. Sort of a pity our own culture is too new for much luxuriousness yet." Of all the new race, he seemed the most completely at ease before Danny, partly because of his age, and partly because they had shared the same enthusiasm for the great ship when it had first arrived.

Now he settled back into one of the old divans, using his immunity to ordinary rules to light a cigarette and pass one to the younger man. "You know all the supplies and things in the ship have puzzled us both, and we couldn't find any record of them? The log ends when they put the old ship up for junking, you remember, and we couldn't figure out why it had been restored and restocked, all ready for some long voyage to somewhere. Well, it came to light in some further excavations they've completed. Danny, your people did that, during the War; or really, after they'd lost the War!"

Danny straightened. The War was a period of history he'd avoided, mostly, though he knew the outlines of it. With homo intelligens increasing and pressing the older race aside by the laws of survival value, his people had made a final desperate bid for supremacy. And while the new race had not wanted the War, they had been forced finally to fight back with as little mercy as had been shown them: and since they had the tremendous advantage of the new intuitive thinking, there had been only thousands left of the original millions of the old race when its brief course was finished. It had been inevitable, probably from the first mutation, but it was not something Danny cared to dwell on. Now he nodded, and let the other continue.

"Your ancestors were beaten, then, Danny, but they weren't completely crushed, and they put about the last bit of energy they had into rebuilding this ship—the only navigable one left them—and restocking it. They were going to go out somewhere, they didn't know quite where, even to another solar system, and take some of the old race for a new start, away from us. It was their last bid for survival, and it failed when my people learned of it and blasted the docks down over the ship, but it was a glorious failure, boy! I thought you'd want to know."

Danny's thoughts centered slowly. "You mean everything on the ship is from my people? But surely the provisions wouldn't have remained usable after all this time!"

"They did, though; the tests we made proved that conclusively. Your people knew how to preserve things as well as we do, and they expected to be drifting in her for half a century, maybe. They'll be usable a thousand years from now." He chucked his cigarette across the room and chuckled in pleased surprise when it fell accurately into a snuffer. "I stuck around, really, to tell you and I've kept the papers over at the school for you to see. Why not come over with me now?"

"Not now, sir. I'd rather stay here a little longer."

Professor Kirk nodded, pulling himself up reluctantly. "As you wish. . . . I know how you feel, and I'm sorry about their moving the ship myself. We'll miss her, Danny."

"Moving the ship?"

Hadn't you heard? I thought that's why you came around at this hour. They want her over in London, and they're bringing one of the old Lunar ships here to replace her. Too bad!" He touched the walls thoughtfully, drawing his hands down and across the rich nap on the seat. "Well, don't stay too long, and turn her lights out before you leave. Place'll be closed in half an hour. 'Night, Danny!"

" 'Night, professor." Danny sat frozen on the soft seat, listening to the slow tread of the old man and the beating of his own heart. They were moving the ship, ripping his plans to shreds, leaving him stranded in the world of a new race, where even the children were sorry for him.

It had meant so much, even to feel that somehow he would escape, some day! Impatiently, he snapped off the lights, feeling closer to the ship in the privacy of the dark, where no watchman could see his emotion. For a year now he had built his life around the idea of taking this ship out and away, to leave the new race far behind. Long, carefully casual months of work had been spent in learning her structure, finding all her stores, assuring himself bit by bit from a hundred old books that he could operate her.

She had seemed designed for the job,

built to be operated by one man, even a cripple, in an emergency, and nearly everything was automatic. Only the problem of a destination had remained, since the planets were all swarming with the others, but the ship's logs had suggested the answer even to that.

Once there had been rich men among his people who sought novelty and seclusion, and found them among the larger asteroids; money and science had built them artificial gravities and given them atmospheres, powered by atomic-energy plants that should last forever. Now the rich men were undoubtedly dead, and the new race had abandoned such useless things. Surely, somewhere among them, there should have been a haven for him, made safe by the very numbers that could baffle almost any search.

Danny heard a guard go by, and slowly got to his feet, to go out again into a world that would no longer hold even that hope. It had been a lovely plan to dream on, a necessary dream. Then the sound of the great doors came to his ears, closing! The professor had forgotten to tell them of his presence! And— !

All right, so he didn't know the history of all those little worlds; perhaps he would have to hunt through them, one by one, to find a suitable home. Did it matter? In every other way, he could never be more ready. For a moment only, he hesitated; then his hands fumbled with the great lock's control switch, and it swung to quietly in the dark, shutting the sound of his running feet back from outside ears.

The little lights came on silently as he found the navigation chair and sank into it. "Ship Sealed . . . Air O.K. . . . Power, Automatic . . . Engine, Automatic . . ." Half a hundred little lights and dials that told the story of a ship ready for a touch of his hand. He moved the course plotter slowly along the tiny atmospheric map until it reached the top of the stratosphere; the big star map moved slowly out, with the pointer in his fingers tracing an irregular, jagged line that would lead him somewhere toward the asteroids, well away from the present position of Mars, and yet could offer no clue. Later he could set the analyzers to finding the present orbit and location of some chosen asteroid and determine his course more accurately, but all that mattered now was to get away, beyond all tracing, before his loss could be reported.

Seconds later his fingers pressed down savagely on the main power switch, and there was a lurch of starting, followed by another slight one as the walls of the Museum crumpled before the savage force on the great ion rockets. On the map, a tiny spot of light appeared, marking the ship's changing position. The world was behind him now, and there was no one to look at his efforts in kindly pity or remind him of his weakness. Only blind fate was against him, and his ancestors had met and conquered that long before.

A bell rang, indicating the end of the atmosphere, and the big automatic pilot began clucking contentedly, emitting a louder cluck now and then as it found the irregularities in the unorthodox course he had charted and swung the ship to follow. Danny watched it, satisfied that it was working. His ancestors may have been capable of reason only, but they had built machines that were almost intuitive and had managed, as the ship about him testified. His head was higher as he turned back to the kitchen, and there was a bit of a swagger to his walk.

The food was still good. He wolfed it down, remembering that supper had been forgotten, and studying slowly through the big log books of the long voyages made by the ship, searching through it for each casual reference to the asteroids. Ceres, Palas, Vesta, some of the ones referred to by nicknames or numbers?

But he had decided when he stood once again in the navigation room, watching the aloof immensity of space; out here it was relieved only by the tiny hot pinpoints that must be stars, colored, small, and intense as no stars could be through an atmosphere. It would be one of the numbered planetoids, referred to also as "The Dane's" in the log. The word was meaningless, but it seemed to have been one of the newer and more completely terrenized, though not the very newest, where any search would surely start.

He set the automatic analyzer to running from the key numbers in the manual and watched it for a time, but it ground on slowly, tracing through all the years that had passed. For a time, he fiddled with the radio, before he remembered that it operated on a wave form no longer used. It was just as well; his severance from the new race would be all the more final.

Still the analyzer ground on. Space lost its novelty, and the operation of the pilot ceased to interest him. He wandered back through the ship toward the lounge, to spy

the parcel where he had dropped and forgotten it. There was nothing else to do.

And once begun, he forgot his doubts at the fact that it was Kenning's story, not the original; there was the same sweep to the tale, the same warm and human characters, the same drive of a race that had felt the mastership of destiny so long ago. Small wonder the readers of that time had named it the greatest epic of space to be written!

Once he stopped, as the analyzer reached its conclusions and bonged softly, to set the controls on the automatic for the little world that might be his home, with luck. And then the ship moved on, no longer veering, but making the slightly curved path its selectors found most suitable, while Danny read further, huddled over the story in the navigator's chair, feeling a new and greater kinship with the characters of the story. He was no longer a poor Earth-bound charity case, but a man and an adventurer with them!

His nerves were tingling with that glow when the tale came to its end, and he let it drop onto the floor from tired fingers. Under his hand, a light had sprung up, but he was oblivious to it, until a crashing gong sounded over him, jerking him from the chair. There had been such a gong described in the story—

And the meaning was the same. His eyes made out the red letters that glared accusingly from the control panel: RADIATION AT TEN O'CLOCK HORIZ. SHIP INDICATED!

Danny's fingers were on the master switch and cutting off all life except pseudo-gravity from the ship as the thought penetrated. The other ship was not hard to find from the observation window; the great streak of an invert-matter rocket glowed hotly out there, pointed apparently back to Earth—probably the *Callistan!*

For a second he was sure they had spotted him, but the flicker must have been only a minor correction to adjust for some small error, for the trail continued. He had no knowledge of the new ships and whether they carried warning signals or not, but apparently they must have dispensed with such things. The streak vanished into the distance, and the letters on the panel that had marked its changing position went dead. Danny waited until the fullest amplification showed no response before throwing power on again. The small glow of the ion rocket would be invisible at the distance, surely.

Nothing further seemed to occur; there was a contented purr from the pilot and the faint sleepy hum of raw power from the rear, but no bells or sudden sounds. Slowly, his head fell forward over the navigator's table, and his heavy breathing mixed with the low sounds of the room. The ship went on about its business as it had been designed to do. Its course was charted, even to the old landing sweep, and it needed no further attention.

That was proved when the slow ringing of a bell woke Danny, while the board blinked in time to it: Destination! Destination! Destination!

He shut off everything, rubbing the sleep from his eyes, and looked out. Above, there was weak but warm sunlight streaming down from a bluish sky that held a few small clouds suspended close to the ground. Beyond the ship, where it lay on a neglected sandy landing field, was the green of grass and the wild profusion of a forest. The horizon dropped off sharply, reminding him that it was only a tiny world, but otherwise it might have been Earth. He spotted an unkempt hangar ahead and applied weak power to the underjets, testing until they moved the ship slowly forward and inside, out of the view of any above.

Then he was at the lock, fumbling with the switch. As it opened, he could smell the clean fragrance of growing things, and there was the sound of birds nearby. A rabbit hopped leisurely out from underfoot as he stumbled eagerly out to the sunlight, and weeds and underbrush were already spreading to cover the buildings about him. For a moment, he sighed; it had been too easy, this discovery of heaven on the first wild try.

But the sight of the buildings drove back the doubt. Once, surrounded by a pretentious formal garden, there had been a great stone mansion, now falling into ruins. Beside it and further from him, a smaller house had been built, seemingly from the wreckage. That was still whole, though ivy had grown over it and half covered the door that came open at the touch of his fingers.

There was still a faint glow to the heaters that drew power from the great atomic plant that gave this little world a perpetual semblance of Earthliness, but a coating of dust was everywhere. The furnishings, though, were in good condition. He scanned over them, recognizing some as similar to the pieces in the Museum, and the products

of his race. One by one he studied this—his fortune, now, and his home!

On the table, a book was dropped casually, and there was a sheet of paper propped against it, with something that might have been a girl's rough handwriting on it. Curiosity carried him closer, until he could make it out, through the dust that clung even after he shook it.

> Dad:
>
> Charley Summers found a wrecked ship of those things, and came for me. We'll be living high on 13. Come on over, if your jets will make it, and meet your son-in-law.

There was no date, nothing to indicate whether "Dad" had returned, or what had happened to them. But Danny dropped it reverently back on the table, looking out across the landing strip as if to see a worn old ship crawl in through the brief twilight that was falling over the tiny world. "Those things" could only be the new race, after the War; and that meant that here was the final outpost of his people. The note might be ten years or half a dozen centuries old —but his people had been here, fighting on and managing to live, after Earth had been lost to them. If they could, so could he!

And unlikely though it seemed, there might possibly be more of them out there somewhere. Perhaps the race was still surviving in spite of time and trouble and even homo intelligens.

His eyes were moist as he stepped back from the door and the darkness outside to begin cleaning his new home. If any were there, he'd find them. And if not—well, he was still a member of a great and daring race that could never know defeat so long as a single man might live. He would never forget that.

Back on Earth, Bryant Kenning nodded slowly to the small group as he put the communicator back, and his eyes were a bit sad in spite of the smile that lighted his face. "The Director's scout is back, and he did chose 'The Dane's'. Poor kid, I'd begun to think we waited too long, and that he never would make it. Another six months—and he'd have died like a flower out of the sun! Yet I was sure it would work when Miss Larsen showed me that story, with its mythical planetoid-paradises. A rather clever story, if you like pseudo-history; I hope the one I prepared was its equal."

"For historical inaccuracy, fully its equal." But the amusement in old Professor Kirk's voice did not reach his lips. "Well, he swallowed our lies and ran off with the ship we built him. I hope he's happy, for a while at least."

Miss Larsen folded her things together and prepared to leave. "Poor kid! He was sweet, in a pathetic sort of way. I wish that girl had turned out better; maybe this wouldn't have been necessary then. See me home, Jack?"

The two older men watched Larsen and Thorpe leave, and silence and tobacco smoke filled the room. Finally Kenning shrugged, and turned to face the professor.

"By now he's found the note. I wonder if it was a good idea, after all? When I first came across it in that story, I was thinking of Jack's preliminary report on Number Sixty-seven, but now I don't know; she's an unknown quantity, at best. Anyhow, I meant it for kindness."

"Kindness. Kindness to repay with a few million credits and a few thousands of hours of work—plus a lie here and there—for all that we owe the boy's race!" The professor's voice was tired, as he dumped the contents of his pipe into a snuffer, and strode over slowly toward the great window that looked out on the night sky. "I wonder, sometimes, Bryant, what kindness Neanderthaler found when the last one came to die. Or whether the race that will follow us when the darkness falls on us will have something better than such kindness."

The novelist shook his head slowly, and there was silence again as they looked out across the world and toward the stars.

THE IRON STANDARD

By LEWIS PADGETT

Padgett presents a neat problem in how to earn a living in a rigidly frozen economy. The explorers had inventions to sell—but there was a law against inventions!

"So the ghost won't walk for a year—Venusian time," Thirkell said, spooning up cold beans with a disgusted air.

Rufus Munn, the captain looked up briefly from his task of de-cockroaching the soup. "Dunno why we had to import these. A year plus four weeks, Steve. There'll be a month at space before we hit Earth again."

Thirkell's round, pudgy face grew solemn. "What happens in the meantime? Do we starve on cold beans?"

Munn sighed, glancing through the open, screened port of the space ship *Goodwill* to where dim figures moved in the mists outside. But he didn't answer. Barton Underhill, supercargo and handy man, who had wangled his passage by virtue of his father's wealth, grinned tightly and said, "What d'you expect? We don't dare use fuel. There's just enough to get us home. So it's cold beans or nothing."

"Soon it will be nothing," Thirkell said solemnly. "We have been spendthrifts. Wasting our substance in riotous living."

"Riotous living" Munn growled. "We gave most of our grub to the Venusians."

"Well," Underhill murmured, "they fed us—for a month."

"Not now. There's an embargo. What do they have against us, anyhow?"

Munn thrust back his stool with sudden decision. "That's something we'll have to figure out. Things can't go on like this. We simply haven't enough food to last us a year. And we can't live off the land—" He stopped as someone unzipped the valve screen and entered, a squat man with high cheekbones and a beak of a nose in a red-bronze face.

"Find anything, Redskin?" Underhill asked.

Mike Soaring Eagle tossed a plastisac on the table. "Six mushrooms. No wonder the Venusians use hydroponics. They have to. Only fungi will grow in this sponge of a world, and most of that's poisonous. No use, skipper."

Munn's mouth tightened. "Yeah. Where's Bronson?"

"Panhandling. But he won't get a *fal.*" The Navaho nodded toward the port. "Here he comes now."

After a moment the others heard Bronson's slow footsteps. The engineer came in, his face red as his hair. "Don't ask me," he murmured. "Don't say a word, anybody. Me, a Kerry man, trying to bum a lousy *fal* from a shagreen-skinned so-and-so with an iron ring in his nose like a Ubangi savage. Think of it! The shame will stay with me forever."

"My sympathy," Thirkell said. "But did you get any *fals?*"

Bronson glared at him. "Would I have taken his dirty coins if he'd offered them?" the engineer yelled, his eyes bloodshot. "I'd have flung them in his slimy face, and you can take my word for it. *I* touch their rotten money? Give me some beans." He seized a plate and morosely began to eat.

Thirkell exchanged glances with Underhill. "He didn't get any money," the latter said.

Bronson started back with a snort. "He asked me if I belonged to the Beggars' Guild! Even tramps have to join a union on this planet!"

Captain Munn scowled thoughtfully. "No, it isn't a union, Bronson, or even much like the medieval guilds. The *tarkomars* are a lot more powerful and a lot less principled. Unions grew out of a definite social and economic background, and they fill a purpose—a check-and-balance system that keeps building. I'm not talking about unions; on Earth some of 'em are good—like the Air Transport—and some are graft-ridden, like Undersea Dredgers. The *tarkomars* are different. They don't fulfill any productive purpose. They just keep the Venusian system in its backwater."

"Yes," Thirkell said, "and unless we're members, we aren't allowed to work—at anything. And we can't be members till we

pay the initiation fee—a thousand *sofals.*"

"Easy on those beans," Underhill cautioned. "We've only ten more cans."

There was silence. Presently Munn passed cigarettes.

"We've got to do something, that's certain," he said. "We can't get food except from the Venusians, and they won't give it to us. One thing in our favor: the laws are so arbitrary that they can't refuse to *sell* us grub—it's illegal to refuse legal tender."

Mike Soaring Eagle glumly sorted his six mushrooms. "Yeah. *If* we can get our hands on legal tender. We're broke—broke on Venus—and we'll soon be starving to death. If anybody can figure out an answer to that one—"

This was in 1964, three years after the first successful flight to Mars, five years since Dooley and Hastings had brought their ship down in Mare Imbrium. The Moon, of course, was uninhabited, save by active but unintelligent algae. The big-chested, alert Martians, with their high metabolism and their brilliant, erratic minds, had been friendly, and it was certain that the cultures of Mars and Earth would not clash. As for Venus, till now, no ship had landed there.

The *Goodwill* was the ambassador. It was an experiment, like the earlier Martian voyage, for no one knew whether or not there was intelligent life on Venus. Supplies for more than a year were stowed aboard, dehydrates, plastibulbs, concentrates, and vitamin foods, but every man of the crew had a sneaking hunch that food would be found in plenty on Venus.

There was food—yes. The Venusians grew it, in their hydroponic tanks under the cities. But on the surface of the planet grew nothing edible at all. There was little animal or bird life, so hunting was impossible, even had the Earthmen been allowed to retain their weapons. And in the beginning it had seemed like a gala holiday after the arduous space trip—a year-long fete and carnival in an alien, fascinating civilization.

It was alien, all right. The Venusians were conservative. What was good enough for their remote ancestors was quite good enough for them. They didn't *want* changes, it seemed. Their current set-up had worked O.K. for centuries; why alter it now?

The Earthmen meant change—that was obvious.

Result: a boycott of the Earthmen.

It was all quite passive. The first month had brought no trouble; Captain Munn had been presented with the keys of the capital city, Vyring, on the outskirts of which the *Goodwill* now rested, and the Venusians brought food in plenty—odd but tasty dishes from the hydroponic gardens. In return, the Earthmen were lavish with their own stores, depleting them dangerously.

And the Venusian food spoiled quickly. There was no need to preserve it, for the hydroponic tanks turned out a steady, unfailing supply. In the end the Earthmen were left with a few weeks' stock of the food they had brought with them, and a vast pile of garbage that had been lusciously appetizing a few days before.

Then the Venusians stopped bringing their quick-spoiling fruits, vegetables, and meat-mushrooms and clamped down. The party was over. They had no intention of harming the Earthmen; they remained carefully friendly. But from now on it was Pay as You're Served—and no checks cashed. A big meat-mushroom, enough for four hungry men, cost ten *fals.*

Since the Earthmen had no *fals,* they got no meat-mushrooms—nor anything else.

In the beginning it hadn't seemed important. Not until they got down to cases and began to wonder exactly how they could get food.

There was no way.

So they sat in the *Goodwill* eating cold beans and looking like five of the Seven Dwarfs, a quintet of stocky, short, husky men, big-boned and muscular, especially chosen for their physiques to stand the rigors of space flight—and their brains, also specially chosen, couldn't help them now.

It was a simple problem—simple and primitive. They, the representatives of Earth's mightiest culture, were hungry. They would soon be hungrier.

And they didn't have a *fal*—nothing but worthless gold, silver and paper currency. There was metal in the ship, but none of the pure metal they needed, except in alloys that couldn't be broken down.

Venus was on the iron standard.

"—there's got to be an answer," Munn said stubbornly, his hard-bitten, harsh face somber. He pushed back his plate with an angry gesture. "I'm going to see the Council again."

"What good will that do?" Thirkell wanted to know. "We're on the spot, there's no getting around it. Money talks."

"Just the same, I'm going to talk to Jorust," the captain growled. "She's no fool."

"Exactly," Thirkell said cryptically.

Munn stared at him, beckoned to Mike Soaring Eagle, and turned toward the valve. Underhill jumped up eagerly.

"May I go?"

Bronson gloomily toyed with his beans. "Why do *you* want to go? You couldn't even play a slot machine in Vyring's skid row—if they had slot machines. Maybe you think if you tell 'em your old man's a Tycoon of Amalgamated Ores, they'll break down and hand out meal tickets—eh?"

But his tone was friendly enough, and Underhill merely grinned. Captain Munn said, "Come along, if you want, but hurry up." The three men went out into the steaming mists, their feet sloshing through sticky mud.

It wasn't uncomfortably hot; the high winds of Venus provided for quick evaporation, a natural air conditioning that kept the men from feeling the humidity. Munn referred to his compass. The outskirts of Vyring were half a mile away, but the fog was, as usual, like pea soup. On Venus it is always bird-walking weather. Silently the trio slogged on.

"I thought Indians knew how to live off the land," Underhill presently remarked to the Navaho. Mike Soaring Eagle looked at him quizzically.

"I'm not a Venusian Indian," he explained. "Maybe I could make a bow and arrow and bring down a Venusian—but that wouldn't help, unless he had a lot of *sofals* in his purse."

"We might eat him," Underhill murmured. "Wonder what roast Venusian would taste like?"

"Find out and you can write a best seller when you get back home," Munn remarked. "*If* you get back home. Vyring's got a police force, chum."

"Oh, well," Underhill said, and left it at that. "Here's the Water Gate. Lord—I smell somebody's dinner!"

"So do I," the Navaho grunted, "but I hoped nobody would mention it. Shut up and keep walking."

The wall around Vyring was in the nature of a dike, not a fortification. Venus was both civilized and unified; there were, apparently, no wars and no tariffs—a natural development for a world state. Air transports made sizzling noises as they shot past, out of sight in the fog overhead. Mist shrouded the streets, torn into tatters by occasional huge fans. Vyring, shielded from the winds, was unpleasantly hot, except indoors where artificial air conditioning could be brought into use.

Underhill was reminded of Venice: the streets were canals. Water craft of various shapes and sizes drifted, glided, or raced past. Even the beggars traveled by water. There were rutted, muddy footpaths beside the canals, but no one with a *fal* to his name ever walked.

The Earthmen walked, cursing fervently as they splashed through the muck. They were, for the most part, ignored.

A water taxi scooted toward the bank, its pilot, wearing the blue badge of his *tarkomar,* hailing them. "May I escort you?" he wanted to know.

Underhill exhibited a silver dollar. "If you'll take this—sure." All the Earthmen had learned Venusian quickly; they were good linguists, having been chosen for this as well as other transplanetary virtues. The phonetic Venusian tongue was far from difficult.

It was no trouble at all to understand the taxi pilot when he said no.

"Toss you for it," Underhill said hopefully. "Double or nothing."

But the Venusians weren't gamblers. "Double what?" the pilot inquired. "That coin? It's silver." He indicated the silver, rococo filigree on the prow of his craft. "Junk!"

"This would be a swell place for Benjamin Franklin," Mike Soaring Eagle remarked. "His false teeth were made of iron, weren't they?"

"If they were, he had a Venusian fortune in his mouth," Underhill said.

"Not quite."

"If it could buy a full-course dinner, it's a fortune," Underhill insisted.

The pilot, eying the Earthmen scornfully, drifted off in search of wealthier fares. Munn, doggedly plodding on, wiped sweat from his forehead. Swell place, Vyring, he thought. Swell place to starve to death.

Half an hour of difficult hiking roused Munn to a slow, dull anger. If Jorust refused to see him, he thought, there was going to be trouble, even though they'd taken away his guns. He felt capable of tearing down Vyring with his teeth. And eating the more edible portions.

Luckily, Jorust was available. The Earthmen were ushered into her office, a big, luxurious room high above the city, with

windows open to the cooling breezes. Jorust was skittering around the room on a high chair, equipped with wheels and some sort of motor. Along the walls ran a slanting shelf, like a desk and presumably serving the same function. It was shoulder-high, but Jorust's chair raised her to its level. She probably started in one corner in the morning, Munn thought, and worked her way around the room during the day.

Jorust was a slim, gray-haired Venusian woman with a skin the texture of fine shagreen, and alert black eyes that were wary now. She climbed down from her chair, gestured the men to seats, and took one herself. She lit a pipe that looked like an oversized cigarette holder, stuffing it with a cylinder of pressed yellow herbs. Aromatic smoke drifted up. Underhill sniffed wistfully.

"May you be worthy of your fathers," Jorust said politely, extending her six-fingered hand in greeting. "What brings you?"

"Hunger," Munn said bluntly. "I think it's about time for a showdown."

Jorust watched him inscrutably. "Well?"

"We don't like being pushed around."

"Have we harmed you?" the Council head asked.

Munn looked at her. "Let's put our cards on the table. We're getting the squeeze play. You're a big shot here, and you're either responsible or you know why. How about it?"

"No," Jorust said after a pause, "no, I'm not as powerful as you seem to think. I am one of the administrators. I do not make the laws. I merely see that they are carried out. We are not enemies."

"That might happen," Munn said grimly. "If another expedition comes from Earth and finds us dead—"

"We would not kill you. It is untraditional."

"You could starve us to death, though."

Jorust narrowed her eyes. "Buy food. Any man can do that, no matter what his race."

"And what do we use for money?" Munn asked. "You won't take our currency. We haven't any of yours."

"Your currency is worthless," Jorust explained. "We have gold and silver for the mining—it is common here. A *difal*—twelve *fals*—will buy a good deal of food. A *sofal* will buy even more than that."

She was right, of course, Munn knew. A *sofal* was one thousand seven hundred twenty-eight *fals*. Yeah!

"And how do you expect us to get any of your iron money?" he snapped.

"Work for it, as our own people do. The fact that you are from another world does not dispose of your obligatory duty to create through labor."

"All right," Munn pursued, "we're willing. Get us a job."

"What kind?"

"Dredging canals! Anything!"

"Are you a member of the canal dredgers' *tarkomar?*"

"No," Munn said. "How could I have forgotten to join?"

Jorust ignored the sarcasm. "You must join. All trades here have their *tarkomars.*"

"Lend me a thousand *sofals* and I'll join one."

"You have tried that before," Jorust told him. "Our moneylenders report that your collateral was worthless."

"Worthless! D'you mean to say we've nothing in our ship worth a thousand *sofals* to your race? It's a squeeze play and you know it. Our water purifier alone is worth six times that to you."

Jorust seemed affronted. "For a thousand years we have cleansed our water with charcoal. If we changed now, we would be naming our ancestors fools. They were not fools; they were great and wise."

"What about progress?"

"I see no need for it," Jorust said. "Our civilization is a perfect unit as it stands. Even the beggars are well-fed. There is no unhappiness on Venus. The ways of our ancestors have been tested and found good. So why change?"

"But—"

"We would merely upset the *status quo* if we altered the balance," Jorust said decisively, rising. "May you be worthy of your fathers' names."

"Listen—" Munn began.

But Jorust was back on her chair, no longer listening.

The three Earthmen looked at one another, shrugged, and went out. The answer was definitely no.

"And that," Munn said, as they descended in the elevator, "is emphatically that. Jorust plans to have us starve to death. The word's out."

Underhill was inclined to disagree. "She's all right. As she said, she's just an administrator. It's the *tarkomars* who are the pressure group here. They're a powerful bloc."

"They run Venus. I know." Munn grimaced. "It's difficult to understand the

psychology of these people. They seem unalterably opposed to change. We represent change. So they figure they'll simply ignore us."

"It won't work," Underhill said. "Even if we starve to death, there'll be more Earth ships later."

"The same gag could work on them, too."

"Starvation? But—"

"Passive resistance. There's no law compelling Venusians to treat with Earthmen. They can simply adopt a closed-door policy, and there's not a thing we can do about it. There's no welcome mat on Venus."

Mike Soaring Eagle broke a long silence as they emerged to the canal bank. "It's a variation of ancestor worship, their psychology. Transferred egotism, perhaps—a racial inferiority complex."

Munn shook his head. "You're drawing it a bit fine."

"All right, maybe I am. But it boils down to worship of the past. And fear. Their present social culture has worked for centuries. They want no intrusions. It's logical. If you had a machine that worked perfectly at the job for which it had been designed, would you want improvements?"

"Why not?" Munn said. "Certainly I would."

"Why?"

"Well—to save time. If a new attachment would make the machine double its production, I'd want that."

The Navaho looked thoughtful. "Suppose it turned out—say—refrigerators. There'd be repercussions. You'd need less labor, which would upset the economic structure."

"Microscopically."

"In that case. But there'd also be a change in the consumer's angle. More people would have refrigerators. More people would make homemade ice cream. Sales on ice cream would drop—retail sales. The wholesalers would buy less milk. The farmers would—"

"I know," Munn said. "For want of a nail the kingdom was lost. You're speaking of microcosms. Even if you weren't, there are automatic adjustments—there always are."

"An experimental, growing civilization is willing to stand for such adjustments," Mike Soaring Eagle pointed out. "The Venusians are ultraconservative. They figure they don't need to grow or change any more. Their system has worked for centuries. It's perfectly integrated. Intrusion of anything might upset the apple cart. The *tarkomars* have the power, and they intend to keep it."

"So we starve," Underhill put in.

The Indian grinned at him. "Looks like it. Unless we can dope out some way of making money."

"We ought to," Munn said. "We were chosen for our I. Q., among other things."

"Our talents aren't too suitable," Mike Soaring Eagle remarked, kicking a stone into the canal. "You're a physicist. I'm a naturalist. Bronson's an engineer, and Steve Thirkell's a sawbones. You, my useless young friend, are a rich man's son."

Underhill smiled in an embarrassed fashion. "Well, dad came up the hard way. He knew how to make money. That's what we need now, isn't it?"

"How did he clean up?"

"Stock market."

"That helps a lot," Munn said. "I think our best plan is to find some process the Venusians really *need,* and then sell it to them."

"If we could wireless back to Earth for help—" Underhill began.

"—then we'd have nothing to worry about," the Navaho ended. "Unfortunately Venus has a Heaviside layer, so we can't wireless. You'd better try your hand at inventing something, skipper. But whether or not the Venusians will want it afterwards, *I* don't know."

Munn brooded. "The *status quo* can't remain permanently that way. It ain't sensible, as my grandfather used to say about practically everything. There are always inventors. New processes—they've got to be assimilated into the social set-up. I should be able to dope out a gadget. Even a good preservative for foods might do it."

"Not with the hydroponic gardens producing as they do."

"Um-m. A better mousetrap—something useless but intriguing. A one-armed bandit—"

"They'd pass a law against it."

"Well, you suggest something."

"The Venusians don't seem to know much about genetics. If I could produce some unusual foods by crossbreeding . . . eh?"

"Maybe," Munn said. "Maybe."

Steve Thirkell's pudgy face looked into the port. The rest of the party were seated at the table, scribbling on stylopads and drinking weak coffee.

"I have an idea," Thirkell said.

Munn grunted. "I know your ideas. What is it now?"

"Very simple. A plague strikes the Venusians and I find an antivirus that will save them. They will be grateful—"

"—and you'll marry Jorust and rule the planet," Munn finished. "Ha!"

"Not exactly," Thirkell went on imperturbably. "If they're not grateful, we'll simply hold out on the antitoxin till they pay up."

"The only thing wrong with that brainstorm is that the Venusians don't seem to be suffering from a plague," Mike Soaring Eagle pointed out. "Otherwise it's perfect."

Thirkell sighed. "I was afraid you'd mention that. Maybe we could be unethical—just a little, you know—and start a plague. Typhoid or something."

"What a man!" the Navaho said admiringly. "You'd make a grand murderer, Steve."

"I have often thought so. But I didn't intend to go as far as murder. A painful, incapacitating disease—"

"Such as?" Munn asked.

"Diphtheria?" the murderous physician suggested hopefully.

"A cheerful prospect," Mike Soaring Eagle muttered. "You sound like an Apache."

"Diphtheria, beriberi, leprosy, bubonic plague," Pat Bronson said violently. "I vote for all of 'em. Give the nasty little frogs a taste of their own medicine. Wallop 'em good."

"Suppose we let you start a mild plague," Munn said. "Something that couldn't conceivably be fatal—how would you go about it?"

"Pollute the water supply or something . . . eh?"

"What with?"

Thirkell suddenly looked heartbroken. "Oh! *Oh!*"

Munn nodded. "The *Goodwill* isn't stocked for that sort of thing. We're germless. Antiseptic inside and out. Have you forgotten the physical treatment they gave us before we left?"

Bronson cursed. "Never will I forget that—a hypo every hour! Antitoxins, shots, ultraviolet X rays, till my bones turned green."

"Exactly," Munn said. "We're practically germless. It's a precaution they had to take, to prevent our starting a plague on Venus."

"But we *want* to start a plague," Thirkell said plaintively.

"You couldn't even give a Venusian a head cold," Munn told him. "So that's out. What about Venusian anæsthetics? Are they as good as ours?"

"Better," the physician admitted. "Not that they need them, except for the children. The synapses are funny. They've mastered self-hypnosis so they can block pain when it's necessary."

"Sulfa drugs?"

"I've thought of that. They've got those, too."

"My idea," Bronson broke in, "is water power. Or dams. Whenever it rains, there's a flood."

"There's good drainage, though," Munn said. "The canals take care of that."

"Now let me finish! Those fish-skinned so-and-sos have hydro-power, but it isn't efficient. There's so much fast water all over the place that they build plants wherever it seems best—thousands of them—and half the time they're useless, when the rains concentrate on another district. Half of the plants are inoperable all the time. Which costs money. If they'd build dams, they'd have a steady source of power without the terrific overhead."

"It's a thought," Munn acknowledged.

Mike Soaring Eagle said, "I'll stick to my crossbreeds in the hydroponic gardens. I can raise beef-steak-mushrooms to taste of Worcestershire sauce or something. An appeal to the palate, you know—"

"Fair enough. Steve?"

Thirkell rumpled his hair. "I'll think of an angle. Don't rush me."

Munn looked at Underhill. "Any flashes of intellect, chum?"

The youngster grimaced. "Not just now. All I can think of is manipulating the stock market."

"Without money?"

"That's the trouble."

Munn nodded. "Well, my own idea is advertising. As a physicist, it's in my line."

"How?" Bronson wanted to know. "Demonstrating atom-smashing? A strong-man act?"

"Pipe down. Advertising isn't known on Venus, though commerce is. That's funny. I should think the retailers would jump at the chance."

"They've got radio commercials."

"Stylized and ritualistic. Their televisors are ready-made for splash advertising. A visual blurb . . . yeah. Trick gadgets I could make to demonstrate the products. Why not?"

"I think I'll build an X-ray machine," Thirkell said suddenly, "if you'll help me, skipper."

Munn said sure. "We've got the equipment—and the blueprints. Tomorrow we'll start. It must be pretty late."

It was, though there was no sunset on Venus. The quintet retired, to dream of full-course dinners—all but Thirkell, who dreamed he was eating a roast chicken that abruptly turned into a Venusian and began to devour him, starting at the feet. He woke up sweating and cursing, took some nembutyl, and finally slept again.

The next morning they scattered. Mike Soaring Eagle took a microscope and other gadgets to the nearest hydroponic center and went to work. He wasn't allowed to carry spores back to the *Goodwill,* but there was no objection to his experimenting in Vyring itself. He made cultures and used forced-growth vitamin complexes and hoped for the best.

Pat Bronson went to see Skottery, head of Water Power. Skottery was a tall, saturnine Venusian who knew a lot about engineering and insisted on showing Bronson the models in his office before they settled down to a talk.

"How many power stations do you have?" Bronson asked.

"Third power twelve times four dozens. Forty-two dozen in this district."

Nearly a million altogether, Bronson made it. "How many in actual operation now?" he carried on.

"About seventeen dozen."

"That means three hundred idle—twenty-five dozen, that is. Isn't the upkeep a factor?"

"Quite a factor," Skottery acknowledged. "Aside from the fact that some of those stations are now permanently inoperable. The terrain changes rapidly. Erosion, you know. We'll build one station on a gorge one year, and the next the water will be taking a different route. We build about a dozen a day. But we salvage something from the old ones, of course."

Bronson had a brainstorm. "No watershed?"

"Eh?"

The Earthian explained. Skottery shook his shoulders in negation.

"We have a different type of vegetation here. There's so much water that roots don't have to strike deeply."

"But they need soil?"

"No. The elements they need are in suspension in the water."

Bronson described how watersheds worked. "Suppose you imported Earth plants and trees and forested the mountains. And built dams to retain your water. You'd have power all the time, and you'd need only a few big stations. And they'd be permanent."

Skottery thought that over. "We have all the power we need."

"But look at the expense!"

"Our rates cover that."

"You could make more money—*difals* and *sofals*—"

"We have made exactly the same profits for three hundred years," Skottery explained. "Our net remains constant. It works perfectly. You fail to understand our economic system, I see. Since we have everything we need, there's no use making more money—not even a *fal* more."

"Your competitors—"

"We have only three, and they are satisfied with their profits."

"Suppose I interest them in my plan?"

"But you couldn't," Skottery said patiently. "They wouldn't be interested any more than I am. I'm glad you dropped in. May you be worthy of your father's name."

"Ye soulless fish!" Bronson yelled, losing his temper. "Is there no red blood in your green-skinned carcass? Does no one on this world know what fight means?" He hammered a fist into his palm. "I wouldn't be worthy of the old Seumas Bronson's name unless I took a poke at that ugly phiz of yours right now—"

Skottery had pressed a button. Two large Venusians appeared. The head of Water Power pointed to Bronson.

"Remove it," he said.

Captain Rufus Munn was in one of the telecasting studios with Bart Underhill. They were sitting beside Hakkapuy, owner of Veetsy—which might be freely translated as Wet Tingles. They were watching the telecast commercial plug for Hakkapuy's product, on the 'visor screen high on the wall.

A Venusian faded in, legs wide apart, arms akimbo. He raised one hand, six fingers spread wide.

"All men drink water. Water is good. Life needs water. Veetsy is good also. Four *fals* buys a globe of Veetsy. That is all."

He vanished. Colors rippled across the screen and music played in off-beat rhythm. Munn turned to Hakkapuy.

"That isn't advertising. You can't get customers that way."

"Well, it's traditional," Hakkapuy said weakly.

Munn opened the pack at his feet, brought out a tall glass beaker, and asked for a globe of Veetsy. It was given him, and he

emptied the green fluid into his beaker. After that, he dropped in a half dozen colored balls and added a chunk of dry ice, which sank to the bottom. The balls went up and down rapidly.

"See?" Munn said. "Visual effect. The marbles are only slightly heavier than Veetsy. It's the visual equivalent of Wet Tingles. Show that on the televisor, with a good sales talk, and see how your sales curve jumps."

Hakkapuy looked interested. "I'm not sure—"

Munn dragged out a sheaf of papers and hammered at the breach in the wall. After a time a fat Venusian came in and said, "May you be worthy of your ancestors' names." Hakkapuy introduced him as Lorish.

"I thought Lorish had better see this. Would you mind going over it again?"

"Sure," Munn said. "Now the principle of display windows—"

When he had finished, Hakkapuy looked at Lorish, who shook his shoulders slowly.

"No," he said.

Hakkapuy blew out his lips. "It would sell more Veetsy."

"And upset the economy charts," Lorish said. "No."

Munn glared at him. "Why not? Hakkapuy owns Veetsy, doesn't he? Who are you, anyhow—a censor?"

"I represent the advertisers' *tarkomar,*" Lorish explained. "You see, advertising on Venus is strongly ritual. It is never changed. Why should it be? If we let Hakkapuy use your ideas, it would be unfair to other makers of soft drinks."

"They could do the same thing," Munn pointed out.

"A pyramiding competition leading to ultimate collapse. Hakkapuy makes enough money. Don't you, Hakkapuy?"

"I suppose so."

"Are you questioning the motives of the *tarkomars*?"

Hakkapuy gulped. "No," he said hastily. "No, no, no! You're perfectly right."

Lorish looked at him. "Very well. As for you, Earthman, you had better not waste your time pursuing this—scheme—further."

Munn reddened. "Are you threatening me?"

"Of course not. I simply mean that no advertiser could use your idea without consulting my *tarkomar,* and we would veto it."

"Sure," Munn said. "O.K. Come on, Bert. Let's get out of here."

They departed, to stroll along a canal bank and confer. Underhill was thoughtful.

"The *tarkomars* have held the balance of power for a long time, it looks like. They want things to stay as they are. That's obvious."

Munn growled.

Underhill went on, "We'd have to upset the whole apple cart to get anywhere. There's one thing in our favor, though."

"What?"

"The laws."

"How do you figure that out?" Munn asked. "They're all against us."

"So far—yes. But they're traditionally rigid and unswerving. A decision made three hundred years ago can't be changed except by a long court process. If we can find a loophole in those laws, they can't touch us."

"All right, find the loophole," Munn said grumpily. "I'm going back to the ship and help Steve build an X-ray machine."

"I think I'll go down to the stock exchange and snoop," Underhill said. "It's just possible—"

After a week, the X-ray device was finished. Munn and Thirkell looked through the Vyring law records and found they were permitted to sell a self-created device without belonging to a *tarkomar,* provided they obeyed certain trivial restrictions. Leaflets were printed and strewed around the city, and the Venusians came to watch Munn and Thirkell demonstrating the merits of Roentgen rays.

Mike Soaring Eagle knocked off work for the day and recklessly smoked a dozen cigarettes from his scanty store, burning with dull fury as he puffed. He had run into trouble with his hydroponic cultures.

"Crazy!" he told Bronson. "Luther Burbank would have gone nuts—the way I'm going. How the devil can I cross-pollenate those ambiguous specimens of Venusian flora?"

"Well, it doesn't seem exactly fair," Bronson consoled. "Eighteen sexes, eh?"

"Eighteen so far. And four varieties that apparently haven't any sex at all. How can you cross-breed those perverted mushrooms? You'd have to exhibit the result in a side show."

"You're getting nowhere?"

"Oh, I'm getting places," Mike Soaring Eagle said bitterly. "I'm getting all sorts of results. The trouble is nothing stays constant. I get a rum-flavored fungus one day, and it doesn't breed true—its spores turn

into something that tastes like turpentine. So you see."

Bronson looked sympathetic. "Can't you swipe some grub when they're not looking? That way the job wouldn't be a complete washout."

"They search me," the Navaho said.

"The dirty skunks," Bronson yelped. "What do they think we are? Crooks?"

"Mph. Something's going on outside. Let's take a look."

They went out of the *Goodwill* to find Munn arguing passionately with Jorust, who had come in person to examine the X-ray machine. A crowd of Venusians watched avidly. Munn's face was crimson.

"I looked it up," he was saying. "You can't stop me this time, Jorust. It's perfectly legal to build a machine and sell it outside the city limits."

"Certainly," Jorust said. "I'm not complaining about that."

"Well? We're not breaking any law."

The woman beckoned, and a fat Venusian waddled forward. "Patent three gross squared fourteen two dozen, issued to Metzi-Stang of Mylosh year fourth power twelve, subject sensitized plates."

"What's that?" Munn asked.

"It's a patent," Jorust told him. "It was issued some time ago to a Venusian inventor named Metzi-Stang. A *tarkomar* bought and suppressed the process, but it's still illegal to infringe on it."

"You mean somebody's already invented an X-ray machine on Venus?"

"No. Merely sensitized film. But that's part of your device, so you can't sell it."

Thirkell pushed forward. "I don't need film—"

The fat Venusian said, "Vibrationary patent three gross two dozen and seven—"

"What now?" Munn broke in.

Jorust smiled. "Machines employing vibration must not infringe on that patent."

"This is an X-ray machine," Thirkell said.

"Light is vibration," Jorust told him. "You can't sell it without buying permission from the *tarkomar* now owning that patent. It should cost—let's see—five thousand *sofals* or so."

Thirkell turned abruptly and went into the ship, where he mixed a whiskey-and-soda and thought wistfully about diphtheria germs. After a time the others appeared, looking disconsolate.

"Can she do it?" Thirkell asked.

Munn nodded. "She can do it, chum. She's done it."

"We're not infringing on their patents."

"We're not on Earth. The patent laws here are so wide that if a man invents a gun, nobody else can make telescopic sights. We're rooked again."

Underhill said, "It's the *tarkomars* again. When they see a new process or invention that might mean change, they buy it up and suppress it. I can't think of any gadget we could make that wouldn't be an infringement on some Venusian patent or other."

"They stay within the law," Munn pointed out. "*Their* law. So we can't even challenge them. As long as we're on Venus, we're subject to their jurisprudence."

"The beans are getting low," Thirkell said morosely.

"Everything is," the captain told him. "Any ideas, somebody?"

There was silence. Presently Underhill took out a globe of Veetsy and put it on the table.

"Where'd you get that?" Bronson asked. "It costs four *fals*."

"It's empty," Underhill said. "I found it in an ash can. I've been investigating glassite—the stuff they use for things like this."

"What about it?"

"I found out how they make it. It's a difficult, expensive process. It's no better than our flexiglass, and a lot harder to make. If we had a flexiglass factory here—"

"Well?"

"The bottom would drop out of Amalgamated Glassité."

"I don't get it," Bronson said "So what?"

"Ever heard of a whispering campaign?" Underhill asked. "My father wangled many an election that way, the old devil. Suppose we passed the word around that there was a new process for making a cheaper, better substitute for glassite? Wouldn't Amalgamated stock drop?"

"Possibly," Munn said.

"We could clean up."

"What with?"

"Oh." Underhill was silent. "It takes money to make money."

"Always."

"I wonder. Here's another idea. Venus is on the iron standard. Iron's cheap on Earth. Suppose we talked about bringing in iron here—strewing it broadcast. There'd be a panic, wouldn't there?"

"Not without some iron to strew around," Munn said. "Counter-propaganda would be telecast; we couldn't compete with it. Our

whispering campaign would be squashed before we got it started. The Venusian government—the *tarkomars*—would simply deny that Earth had unlimited iron supplies. We wouldn't profit, anyway."

"There must be some angle," Underhill scowled. "There's got to be. Let's see. What's the basis of the Venusian system?"

"No competition," Mike Soaring Eagle said. "Everybody has all he wants."

"Maybe. At the top. But the competitive instinct is too strong to be suppressed like that. I'll bet plenty of Venusians would like to make a few extra *fals*."

"Where does that get us?" Munn wanted to know.

"The way my father did it. . . . Hm-m-m. He manipulated, pulled the wires, made people come to him. What's the weak spot in Venusian economy?"

Munn hesitated. "Nothing we can strike at—we're too handicapped."

Underhill shut his eyes. "The basis of an economic and social system is—what?"

"Money," Bronson said.

"No. Earth's on the radium standard. Years ago it was gold or silver. Venus is on iron. And there's the barter system, too. Money's variable."

"Money represents natural resources—" Thirkell began.

"Man-hours," Munn put in quietly.

Underhill jumped. "That's it! Of course —man-hours! That's the constant. The amount of production a man can turn out in an hour represents an arbitrary constant —two dollars, a dozen *difals*, or whatever it is. That's the base for any economic set-up. And it's the base we've got to hit. The ancestor worship, the power of the *tarkomars*—they're superficial really. Once the basic system is challenged, they'll go down."

"I don't see where it gets us," Thirkell said.

"Make the man-hours variable," Underhill explained. "Once we do that, anything can happen."

"Something had better happen," Bronson said, "and quick. We've little food left."

"Shut up," Munn said. "I think the kid's got the right angle. Alter the man-hour constant, eh? How can we do that? Specialized training? Train a Venusian to turn out twice as much stuff in the same period of time? Skilled labor?"

"They've got skilled labor," Underhill said. "If we could make 'em work faster, or increase their stamina—"

"Benzedrine plus," Thirkell interrupted. "With enough caffeine, vitamin complex, and riboflavin—I could whip up a speeder-upper, all right."

Munn nodded slowly. "Pills, not shots. If this works out, we'll have to do it under-cover after a while."

"What the devil will it get us to make the Venusians work faster?" Bronson asked.

Underhill snapped his fingers. "Don't you see? Venus is ultra-conservative. The economic system is frozen static. It isn't adapted to change. There'll be hell popping!"

Munn said, "We'll need advertising to arouse public interest first of all. A practical demonstration." He looked around the table, his gaze settling on Mike Soaring Eagle. "Looks like you're elected, Redskin. You've more stamina than any of us, according to the tests we took back on Earth."

"All right," the Navaho said. "What do I do?"

"Work!" Underhill told him. "Work till you drop!"

It began early the next morning in the main plaza of Vyring. Munn had checked up carefully, determined to make sure nothing would go wrong, and had learned that a recreation building was to be constructed on the site of the plaza. "Work won't start for several weeks," Jorust said. "Why?"

"We want to dig a hole there," Munn said. "Is it legal?"

The Venusian smiled. "Why, of course. That's public domain—until the contractors begin. But a demonstration of your muscular prowess won't help you, I'm afraid."

"Eh?"

"I'm not a fool. You're trying to land a job. You hope to do that by advertising your abilities. But why do it in just this way? Anybody can dig a hole. It isn't specialized."

Munn grunted! If Jorust wanted to jump at that conclusion, swell. He said, "It pays to advertise. Put a steam shovel to work, back on Earth, and a crowd will gather to watch it. We don't have a steam shovel, but—"

"Well, whatever you like. Legally you're within your rights. Nevertheless you can't hold a job without joining a *tarkomar*."

"Sometimes I think your planet would be a lot better off without the *tarkomars*," Munn said bluntly.

Jorust moved her shoulders. "Between ourselves, I have often thought so. I am

merely an administrator, however. I have no real power. I do what I'm told to do. If I were permitted, I would be glad to lend you the money you need—"

"What?" Munn looked at her. "I thought—"

The woman froze. "It is not permitted. Tradition is not always wisdom, but I can do nothing about it. To defy the *tarkomars* is unthinkable and useless. I am sorry."

Munn felt a little better after that, somehow. The Venusians weren't all enemies. The all-powerful *tarkomars,* jealous of their power, fanatically desirous of preserving the *status quo,* were responsible for this mess.

When he got back to the plaza, the others were waiting. Bronson had rigged up a scoreboard, in phonetic Venusian, and had laid out mattock, pick, shovel, wheelbarrow and boards for the Navaho, who stood, a brawny, red-bronze figure, stripped to the waist in the cool wind. A few canalboats had stopped to watch.

Munn looked at his watch. "O.K., Redskin. Let's go. Steve can start—"

Underhill began to beat a drum. Bronson put figures on the scoreboard: 4:03:00, Venusian Vyring Time. Thirkell went to a nearby camp table, littered with bottles and medical equipment, shook from a vial one of the stimulant pills he had concocted, and gave it to Mike Soaring Eagle. The Indian ate it, heaved up the mattock, and went to work.

That was all.

A man digging a hole. Just why the spectacle should be so fascinating no one has ever figured out. The principle remains the same, whether it's a steam shovel scooping out half a ton of earth at a bite, or a sweating, stocky Navaho wielding shovel and pick. The boats grew thicker.

Mike Soaring Eagle kept working. An hour passed. Another. There were regular, brief rest periods, and Mike kept rotating his tools, to get all his muscles into play. After breaking earth for a while with the mattock, he would shovel it into the wheelbarrow, roll his burden up a plank and dump it on an ever-growing pile some distance away. Three hours. Four. Mike knocked off for a brief lunch. Bronson kept track of the time on his scoreboard.

Thirkell gave the Navaho another pill. "How're you doing?"

"Fine. I'm tough enough."

"I know, but these stimulants—they'll help."

Underhill was at a typewriter. He had already ground out a tremendous lot of copy, for he had been working since Mike Soaring Eagle started. Bronson had discovered a long-forgotten talent and was juggling makeshift Indian clubs and colored balls. He'd been keeping that up for quite a while, too.

Captain Rufus Munn was working a sewing machine. He didn't especially like the task, but it was precision work, and therefore helpful to the plan. All the party except Thirkell was doing something, and the physician was busy administering pills and trying to look like an alchemist.

Occasionally he visited Munn and Underhill, collected stacks of paper and carefully sewn scraps of cloth, and deposited them in various boxes near the canal, labeled, "Take one." On the cloth a legend was machine-embroidered in Venusian: "A Souvenir from Earth." The crowds thickened.

The Earthmen worked on. Bronson kept juggling, with pauses for refreshment. Eventually he experimented with coin and card tricks. Mike Soaring Eagle kept digging. Munn sewed. Underhill continued to type—and the Venusians read what his flying fingers turned out.

"Free! Free! Free!" the leaflets said. "Souvenir pillowcase covers from Earth! A free show! Watch the Earthmen demonstrate stamina, dexterity and precision in four separate ways. How long can they keep it up? With the aid of POWER PILLS —indefinitely! Their output is doubled and their precision increased by POWER PILLS —they pep you up! A medical product of Earth that can make any man worth twice his weight in *sofals!*"

It went on like that. The old army game —with variations. The Venusians couldn't resist. Word got around. The mob thickened. How long could the Earthmen keep up the pace?

They kept it up. Thirkell's stimulant pills —as well as the complex shots he had given his companions that morning—seemed to be working. Mike Soaring Eagle dug like a beaver. Sweat poured from his shining red-bronze torso. He drank prodigiously and ate salt tablets.

Munn kept sewing, without missing a stitch. He knew that his products were being scanned closely for signs of sloppy workmanship. Bronson kept juggling and doing coin tricks, never missing. Underhill typed with aching fingers.

Five hours. Six hours. Even with the rest periods, it was grueling. They had brought food from the *Goodwill*, but it wasn't too palatable. Still, Thirkell had selected it carefully for caloric.

Seven hours. Eight hours. The crowds made the canals impassable. A policeman came along and argued with Thirkell, who told him to see Jorust. Jorust must have put a flea in his ear, for he came back to watch, but not to interfere.

Nine hours. *Ten hours.* Ten hours of Herculean effort. The men were exhausted —but they kept going.

They had made their point by then, though, for a few Venusians approached Thirkell and inquired about the Power Pills. What were they? Did they really make you work faster? How could they buy the—

The policeman appeared to stand beside Thirkell. "I've a message from the medical *tarkomar,*" he announced. "If you try to sell any of those things, you go to jail."

"Wouldn't think of it," Thirkell said. "We're giving away free samples. Here, buddy." He dug into a sack and tossed the nearest Venusian a Power Pill. "Two days' work in that instead of your usual one. Come back for more tomorrow. Want one, pal? Here. You, too. Catch."

"Wait a minute—" the policeman said.

"Go get a warrant," Thirkell told him. "There's no law against making presents."

Jorust appeared with a burly, intolerant-looking Venusian. She introduced the latter as head of the Vyring *tarkomars.*

"And I'm here to tell you to stop this," the Venusian said.

Thirkell knew what to say. His companions kept on with their work, but he felt them watching and listening.

"What rule do you invoke?"

"Why . . . why, peddling."

"I'm not selling anything. This is public domain; we're putting on a free show."

"Those . . . ah . . . Power Pills—"

"Free gifts," Thirkell said. "Listen, pal. When we gave all our food to you Venusian crooks, did you squaw? No, you took it. And then clamped down. When we asked for our grub back, you just told us that we had no legal recourse; possession is nine points of the law, and we had a perfect right to make free gifts. That's what we're doing now—giving presents. So what?"

Jorust's eyes were twinkling, but she hooded them swiftly. "I fear he speaks the truth. The law protects him. It is no great harm."

Thirkell, watching her, wondered. Had Jorust guessed the right answer? Was she on their side? The *tarkomar* leader turned dark green, hesitated, swung on his heel, and went away. Jorust gave the Earthmen a long, enigmatic look, moved her shoulders, and followed.

"I'm still stiff," Mike Soaring Eagle said a week later in the *Goodwill.* "Hungry, too. When do we get grub?"

Thirkell, at the valve, handed out a Power Pill to a Venusian and came back rubbing his hands and grinning. "Wait. Just wait. What's going on, skipper?"

Munn nodded toward Underhill. "Ask the kid. He got back from Vyring a few minutes ago."

Underhill chuckled. "There was hell popping. All in a week, too. We've certainly struck at the economic base. Every Venusian who labors on a piecework basis wants our pills, so he can speed up his production and make more *fals.* It's the competitive instinct—which is universal."

"Well?" Bronson asked. "How do the lizard-faced big shots like that?"

"They don't like it. It's hit the economic set-up they've had for centuries. Till now, one Venusian would make exactly ten *sofals* a week—say—by turning out five thousand bottle caps. With the pills Steve made up, he's turning out eight or ten thousand and making correspondingly more dough. The guy at the next bench says what the hell, and comes to us for a Power Pill for himself. Thus it goes. And the lovely part is that not all the labor is on piecework basis. It can't be. You need tangibles for piecework. Running a weather machine has got to be measured by time—not by how many raindrops you make in a day."

Munn nodded. "Jealousy, you mean?"

Underhill said, "Well, look. A weather-machine operator has been making ten *sofals* a week, the same as a bottle capper on piecework Now the bottle capper's making twenty *sofals.* The weather-machine man doesn't see the point. He's willing to take Power Pills, too, but that won't step up his production. He asks for a raise. If he gets it, the economy is upset even more. If he doesn't, other weather-machine operators get together with him and figure it's unfair discrimination. They get mad at the *tarkomars.* They strike!"

Mike Soaring Eagle said, "The *tarkomars* have forbidden work to any Venusian taking Power Pills."

"And still the Venusians ask us for Power

Pills. So what? How can you prove a man's been swallowing them? His production steps up, sure, but the *tarkomars* can't clamp down on everybody with a good turnout. They tried that, and a lot of guys who never tried the Power Pills got mad. They were fast workers, that was all."

"The demonstration we put on was a good idea," Thirkell said. "It was convincing. I've had to cut down the strength of the pills—we're running low—but the power of suggestion helps us."

Underhill grinned. "So the base—the man-hour unit—had gone cockeyed. One little monkey wrench, thrown where it'll do the most good. It's spreading, too. Not only Vyring. The news is going all over Venus, and the workers in the other cities are asking why half of Vyring's laborers should get better pay. That's where the equal standard of exchange helps us—one monetary system all over Venus. Nothing has even been off par here for centuries. Now—"

Munn said, "Now the system's toppling. It's a natural fault in a perfectly integrated, rigid set-up. For want of a nail the *tarkomars* are losing their grip. They've forgotten how to adjust."

"It'll spread," Underhill said confidently. "It'll spread. Steve, here comes another customer."

Underhill was wrong. Jorust and the Vyring *tarkomar* leader came in. "May you be worthy of your ancestors' names," Munn said politely. "Drag up a chair and have a drink. We've still got a few bulbs of beer left."

Jorust obeyed, but the Venusian rocked on his feet and glowered. The woman said, "Malsi is distressed. These Power Pills are causing trouble."

"I don't know why," Munn said. "They increase production, don't they?"

Malsi grimaced. "This is a trick! A stratagem! You are abusing our hospitality!"

"What hospitality?" Bronson wanted to know.

"You threatened the system," Malsi plunged on doggedly. "On Venus there is no chance. There must be none."

"Why not?" Underhill asked. "There's only one real reason, and you know it. Any advances might upset the *tarkomars*—threaten the power they hold. You racketeers have had the whip hand for centuries. You've suppressed inventions, kept Venus in a backwater, tried to drive initiative out of the race, just so you could stay on top. It can't be done. Changes happen; they always do. If we hadn't come, there'd have been an internal explosion eventually."

Malsi glared at him. "You will stop making these Power Pills."

"Point of law," Thirkell said softly. "Show precedent."

Jorust said, "The right of free gift is one of the oldest on Venus. That law could be changed, Malsi, but I don't think the people would like it."

Munn grinned. "No. They wouldn't. That would be the tip-off. Venusians have learned it's possible to make more money. Take that chance away from them, and the *tarkomars* won't be the benevolent rulers any more."

Malsi turned darker green. "We have power—"

"Jorust, you're an administrator. Are we protected by your laws?" Underhill asked.

She moved her shoulders. "Yes, you are. The laws are sacrosanct. Perhaps because they have always been designed to protect the *tarkomars.*"

Malsi swung toward her. "Are you siding with the Earthmen?"

"Why, of course not, Malsi. I'm merely upholding the law, according to my oath of office. Without prejudice—that's it, isn't it?"

Munn said, "We'll stop making the Power Pills if you like, but I warn you that it's only a respite. You can't halt progress."

Malsi seemed unconvinced. "You'll stop?"

"Sure. If you pay us."

"We cannot pay you," Malsi said stubbornly. "You belong to no *tarkomar.* It would be illegal."

Jorust murmured, "You might give them a free gift of—say—ten thousand *sofals.*

"Ten thousand!" Malsi yelped. "Ridiculous!"

"So it is," Underhill said. "Fifty thousand is more like it. We can live well for a year on that."

"No."

A Venusian came to the valve, peeped in, and said: "I made twice as many *difals* today. May I have another Power Pill?" He saw Malsi and vanished with a small shriek.

Munn shrugged. "Suit yourself. Pay up, or we go on handing out Power Pills—and you'll have to adjust a rigid social economy. I don't think you can do it."

Jorust touched Malsi's arm. "There is no other way."

"I—" The Venusian by now was almost

Continued on page 16

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